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Manufacturers' Record.

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THOMAS P. GRASTY, Vice-President.

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COPY FOR ADVERTISEMENTS.

Advertising copy (changes or new advertisements) should reach us Saturday Morning to insure insertion in the issue of the following week.

For the first issue in the month we should receive copy by Friday Morning of the week preceding.

FOR ACCURATE COTTON FIGURES.

No figures have more vital interest for the South than those bearing upon the cotton crop and its movements. The nearer they approach accuracy the better for cotton-growers and cotton manufacturers. Many agencies are employed in an effort to insure such accuracy, and thousands of dollars are spent annually by the general government, by cotton exchanges, by periodicals and by individuals in following the crop from planting to its destination in American cotton mills or in other markets of the world. Reports of acreage, estimates of crops based upon acreage, periodical statements of crop conditions, the weekly movements and marketings and the annual reviews of results as recorded in the markets are phases of the labor spent for the benefit of legitimate sellers and buyers, and to the diminution of the influence of the speculator and city farmer. In all of this, however, the interest has attached principally to the commercial crop. This includes not merely the crop planted in any one year, but also the portions of any earlier crop brought for the first time into the markets. Hence there has always been an element of uncertainty independent of the weather or other conditions affecting the growing crop and its movement to market.

In the desire to reduce this element to a minimum the census office undertook in 1900 an absolutely new experiment in the statistics of cotton by collecting a quick and accurate count of the cotton crop through the ginner. The experiment had such a satisfactory result that it was attempted again in 1901, and a third report covering the crop of 1901 was published as an advance bulletin of the census on April 12 last, four and a-half months earlier than such information could be had through the medium of the commercial movement. In the meantime the census office, made permanent, had been

authorized to make an annual canvass of the cotton crop based upon reports of ginner, with preliminary reports at brief intervals.

Men who have followed during many years the manifestations in the field of cotton have been deeply impressed with the value of this new plan, and will read with interest the paper published on another page of this week's issue of the Manufacturers' Record, in which Mr. S. N. D. North, chief statistician of the division of manufactures of the census, traces its experimental stages and clearly demonstrates its merits. It has not yet been perfected, but there is little doubt that it will be, and the promise of that is in the fact that Mr. North and those working with him recognize the difficulties in the way and understand that they cannot be overcome in a day. Perfection will be reached the more speedily as the census office shall enjoy the hearty co-operation of everybody concerned in having prompt and accurate reports about the size of the cotton crop. The plan should appeal especially to the cotton-growers, inasmuch as the preliminary reports are to be made between October and January, in which period, as Mr. North points out, the staple is passing from the grower's hands, and the value of the crop to him is determined. Correct reports at that time will be a clog upon the gambler, and, consequently, will save both the grower and the manufacturer from injury.

STATE POLICE FOR THE SOUTH.

It is announced from Atlanta that Mr. R. B. Blackburn will father at the present session of the general assembly of Georgia a bill providing for the selection of about 10,000 additional police officers in the State. As explained by its author, the bill commends itself to prompt passage for Georgia and to adoption as soon as possible by every other Southern State. It means order, safety and prosperity. The bill provides for the choice by the grand jury of each county in the State of seven men in each militia district to act as patrolmen. Each group of seven is to select a captain, and to his call the patrol is subject. Under such a system, and wherever the necessity arises, patrolmen may be provided upon a basis of one for every six square miles of the State's area and for every two hundred and twenty of its population, and the officers thus provided will be specially charged with the arrest of all suspicious characters and individuals who may be leading a profligate or an immoral life. The bill enlarges the vagrancy law so as to bring within its purview all persons who have no fixed abode, and who may be found tramping through the country with no visible means of support.

The proposed measure seems to seek a revival of some of the features of the old patrol system of the South, and should it succeed it would not only prove a deterrent of crime and misdemeanors costly to the State in many

ways, but would also be an effective means for the prompt administration of justice, and thereby effect a saving. It strikes at the root of many evils, social, economic, industrial, agricultural and financial, in reinforcing vagrancy laws. One of the curses of the South is vagrancy, increasing with the means for improper schooling of negroes, and vagrancy is the parent of divers offences against persons and property and a constant drain upon the strength of the community. This is especially the case in rural districts, where the idlers and drones, living upon the honest and dishonest exertions of others, the inevitable criminals of the future, are not as easily restrained as they may be in the cities whither many of them drift. The knowledge that at any moment the country patrolman may appear will have the effect of checking the tendency to vagrancy, with all its possible dangers. Therefore, the law as proposed will be of inestimable value to the country neighborhood, making more secure life and property there, and will do much toward a settlement of many of the difficulties which have cultivated the unhealthy migration of valuable elements of the population from country to town. It will not only induce stability in that class of the population, but will add to its numbers.

The author of the bill believes that the law as framed by him may be executed almost without direct expense for the State. That feature will undoubtedly make it popular. But the expense should be regarded of minor importance. Georgia could well afford to spend for a few years half a million dollars annually upon such a police system, and every other Southern State would do well to make a similar investment in proportion to its needs. Such an expenditure would have the immediate effect of enhancing farm values and of increasing the density of the country population of the South, and thus of ultimately increasing the ability of the State to make the expenditure, and at the same time of reducing to a minimum the necessity for it. It is an investment which will begin to pay interest immediately, and which will require no sinking fund for the extinction of obligations arising from it.

Mr. Rufus N. Rhodes, editor of the Birmingham News, is to be congratulated upon the results of his efforts to bring about a settlement of the strike of miners of the Tennessee Coal, Iron & Railroad Co. The settlement was satisfactory, and officials of the company, in announcing that it had averted what promised to be a protracted and bitter strike, costly to the company and the miners and disastrous to the welfare of the community, said that the settlement was due solely to

the good offices and unceasing labors of Mr. Rhodes. The miners' executive boards adopted resolutions thanking Mr. Rhodes for his wise counsel and unremitting labor in bringing about a satisfactory and honorable adjustment of the difference, and the citizens of Birmingham, through a special committee, conveyed to Mr. Rhodes the general appreciation of his public-spirited services. These evidences of good-will on the part of everybody concerned in peaceful, uninterrupted conduct of industry at Birmingham will be a source of deep satisfaction to Mr. Rhodes for the rest of his life.

AMERICAN LEARNING MENACED.

When the Carnegie Institution was founded a year ago in the gift of \$10,000,000 in securities from Andrew Carnegie fear was expressed that the benefaction, intended for the advancement of science and the discovery of exceptional scholars and investigators, might have an asphyxiating effect upon American learning. Authoritative statements about the plans for the institution were so nebulous and other circumstances were so dubious that there were grounds for a belief that the weight of such a fund might be too great for poor human nature to carry, however lofty its motives might be. Time has not lessened the feeling of apprehension. That feeling seems to be as strong among men of scientific attainments as among ordinary observers of every-day tendencies. It is finding expression quite forcibly with the approach of the date of the November meeting of the trustees of the Institution.

It is thought that at that time a large number of reports from advisory committees and suggestions from eminent scientists will be considered and that a definite policy may be permanently fixed. The possibilities of this meeting have been deemed so momentous that the editor of Science, Dr. J. McKeen Cattell, invited some weeks ago a general discussion of the subject. A number of gentlemen have accepted the invitation, and it is remarkable how deeply rooted seems to be the thought that while the institution may be of value in supplementing work for science already under way or in leading into new fields, it may have within it elements of irreparable injury.

Dr. Cattell, in his introductory article, made some excellent suggestions as to the establishment at Washington of an institution somewhat on the plan of the Royal Institution of London, to be a center for scientific activities, and in connection with that the building up at Washington of a press, to be the medium of publication in the best form and upon most advantageous terms of the various scientific journals of the country without interference with their autonomy. Dr. Cattell insists that the scientific journals should be controlled by the scientific men, and that if the Carnegie Institution should undertake to own or control them, their contents

Advertisements of Southern localities offering special advantages for the location of manufacturing enterprises will be found on pages 52 and 53.

would show no appreciable improvement, and in the end the cause of science would be injured. In the same vein he discusses the serious difficulties in the way of distributing the entire income of the Carnegie fund among existing institutions, and says: "These institutions might depend on subsidies rather than on their own efforts."

H. W. Wiley of the bureau of chemistry of the National Department of Agriculture points out that the government is already spending \$5,000,000 annually for exclusively scientific purposes—ten times the total income from the Carnegie fund. He refers to great public and private endowments in the same direction, and says:

The one mistake, therefore, which the trustees of the Carnegie fund will be certain to avoid is the granting of such bounties as will foster that hebetude which springs from satiety. If science should descend to the mere plane of a money-maker it would then be time to form a trust to limit all activity and confer the revenues upon a chosen few. But that day is, happily, yet far off.

Such optimism is not manifest in the views of others. Graham Lusk of New York holds that it would be practically impossible to avoid favoritism in allotting research scholarships to different laboratories of the country; David Starr Jordan of Stanford University, without underrating the value of opportunity to eager but impecunious students, suggests a Carnegie fellowship which "could be used—as few fellowships are now used—without danger of pauperizing embryo investigators," and Morris Loeb of New York, favoring a facilitation of "research for all instead of offering incentives to the chosen few," referring to "favored beneficiaries" and to the possibility of colleges being caused "to shape their course with the sole view of pleasing the guardians of the fund for the time being," and contending that the institution "can do measurable harm by seeking to supplant private initiative with artificial stimulus, but can do immeasurable good by clearing away the obstacles that now trammel the general growth of the scientific spirit in America," expresses the hope "that the trustees will reject those propositions which would most seriously menace the free development and untrammelled activity of our various scientific bodies and institutions of learning, especially the establishment of a huge reserve fund, with the annual distribution of its income among the 'deserving poor.'" This menace is explained by Hugo Muensterberg of Harvard University. He confesses to a lack of funds in Harvard and other institutions, and frankly says that if the Carnegie Institution is to endeavor to make up the lack, he will look out for his share of the spoil. But he prefers to go on with his suffering in the higher interests of the scholarly life of the whole country, and dwelling upon the necessity for Harvard trustees, its alumni and its local friends to be stimulated to build up the university by their generosity, enthusiasm and sacrifices, he says:

Every cent from Washington which disburdens the local officials is an opiate for this feeling of responsibility. It would be the gain of the moment and the ruin for the strongest factor of progress in the long run.

Dr. Cattell alluded to a possible practical exemplification of Muensterberg's theory in discussing the vote of the corporation of the Marine Biological Laboratory at Wood's Holl, Mass., to transfer the laboratory to the Carnegie Institution. This undertaking, incorporated fourteen years ago, is organized upon a national and co-operative basis, and is notable for its independent posi-

tion and democratic organization. In Dr. Cattell's opinion, it is a case where financial difficulties might be relieved by the Carnegie Institution "without suppressing the public spirit and service of those who now conduct the laboratory." But he says that the alternative was presented of "giving away the laboratory or losing the large support of the Carnegie Institution, and, perhaps, witnessing the establishment of a rival laboratory," and he adds that "it seems that as a branch of the Carnegie Institution the laboratory would either be less adequately supported than if it had remained an independent institution, or it would be aggrandized at the cost of other biological laboratories, exploring expeditions, etc. In either case the centralized power of money would crush the only serious attempt of scientific men to conduct an institution for research."

C. O. Whitman, director of the laboratory, says that the proposition to acquire the laboratory as a condition to supporting it did not originate with the trustees of the Carnegie Institution, but that when, under the compulsory circumstances of the financial situation, the trustees were asked if they would be willing to support the laboratory without owning it, the reply was that "they should have preferred to give support without taking the whole responsibility of ownership. It was the emergency that induced them to make the offer of support contingent on our surrender of the ownership to them. It was made clear to us, however, that support without ownership might be considerably less than support with ownership, and that it would have to take the form of a grant to run for a limited time, which might or might not be renewed." Added to this was an intimation from the formulators of the scheme of amalgamation that it would, without causing the loss of anything essential to independence, give a permanent support "almost beyond the dream of avarice," and that if the decision were delayed it would look like lack of confidence, and might lose not only the support, but also the good-will of the Carnegie trustees. But Dr. Whitman thinks that independence is threatened, and his regrets are expressed as follows:

I venture to say that the personal sacrifices already made in the development of the laboratory, the work it has done in research and instruction, the example it has given of the efficacy of co-operation in science, the ideals it has upheld, the national character of its organization, the promising increase of its financial support, all entitle it to hold its independence above any price. Our attitude toward the proposition has been determined mainly by the desire to secure an immediate and permanent support. While we all agree in the desire, we certainly do not all agree that we can surrender the independence of the laboratory with either honor or safety. * * * It is difficult to see how independence can be exchanged for money and co-operation still remain unimpaired. * * * Cause, responsibility, free initiative, free development, untrammelled policy, all go with independence. The surrender of the ownership of the laboratory reduces it at once to the level of an annex, subordinates its individuality, strips it of final authority, robs it of power to control its own destiny, and subjects its present owners permanently to the condition of petitioners.

This discussion of the possible dangers lurking in the Carnegie proposition, with the distinct example given in Dr. Whitman's protest, almost passionate in its intensity, appeals primarily to men of science and to the officers of institutions for higher education. But it has a wider import, especially in view of certain developments, of which more may be said hereafter, bearing upon the prelimi-

nary work of administering the Carnegie \$10,000,000 trust.

There is a certain interrelation of ideas and individuals between the Carnegie fund and other funds intended to promote education in the United States, to say nothing of the international educational subsidy provided by Cecil Rhodes. Such subsidies may not have the serious effect upon higher education apprehended, though with "favoritism" and with a fostering of "hebetude," the exceptional man who David Starr Jordan says is already at hand may be hampered. Men of an age to be considered in the handling of the Carnegie income may be strong enough intellectually and morally to assimilate without injury the germs disseminated from Washington that would sap free initiative, free development and the spirit of independence in younger and weaker individuals, but if the elders are so menaced, how great must be the danger in such a fund as that which would be distributed under the guidance of the Southern Education Board? If money sent from Washington for the benefit of Harvard could be an opiate for the feeling of responsibility among local officials, and if it could bring ruin in the long run for the strongest factor of progress, and if it is possible for "the centralized power of money" to crush such a noteworthy institution as the Marine Laboratory at Wood's Holl, how deleterious must be the effect of money sent to the South to aid its people to provide the means for teaching children to read and write? In that case the opiate is applied when nerve centers may be permanently affected for ill and "the centralized power of money" is given a position to crush the half-developed. Independence and initiative are sapped at their source.

SLURRING ONE'S NEIGHBORS.

In presenting figures showing that the bank clearings at Memphis have increased from \$2,391,810 in 1893 to \$11,889,398 in 1902 the Knoxville Sentinel congratulates Memphis most enthusiastically, and says:

There is plenty of room in Tennessee for its four important cities. There is a good deal said in the papers of each about respective claims for prominence, but this is probably because the editors think this is an easy subject for cheap witticism.

That is a very charitable view that the Sentinel takes of the slurs in which certain papers of Tennessee, and especially one which hampers a city of Eastern Tennessee which is not Knoxville, are inclined to indulge whenever anything is published in praise of any other Tennessee City. The spirit which animates that paper is not a desire to find an easy subject for cheap witticism, but is the product of innate churlishness, added to lack of original thought. The less Southern newspapers indulge in reflections upon cities which they regard as rivals to their own the better for their own cities. The barking dog seldom bites, and tears belong to childhood. Southern cities have enough to do for their own advancement without going out of the way to depreciate their neighbors.

One of the most timely publications of the general government is Senate Document No. 84, circulated by the forestry bureau of the United States Agricultural Department. This publication, in quarto form, is a handsomely illustrated compilation of all the important matter which has thus far been published pertaining to the proposed Appalachian National Forest Reserve. It is an argument in itself for the necessity

of the reserve, and ought to go far in crystallizing public opinion in its favor and hastening at the coming session of Congress action by the House of Representatives necessary to complete legislation looking to the establishment of the reserve.

SETTLERS FOR THE SOUTH.

Substantial Results of Many Years' Work for Immigration.

M. V. Richards, the land and industrial agent of the Southern Railway Co., is a worker rather than a talker. But a few days ago the writer, meeting Mr. Richards for an hour or two on the cars while passing through the Carolinas, turned naturally to a discussion of the progress of the South, and without attempting to quote his exact words, some of the points made by Mr. Richards may be summed up as follows:

"At last, after many years of seed-sowing, often under great discouragement, the South is beginning to reap the harvest. To get capital to come South was for a long time a difficult proposition, but it was much more difficult to induce people to locate here. To the great mass of Northern and Western people the South was an unknown region. So deep were the prejudices against this section that the people were more inclined to accept every false or sensational statement against the South than to believe any good of it. The men who in the early days blazed their way through the forests, crossed the Alleghanies and opened up the West, and the men who later pressed on from Ohio and Indiana and Illinois to Iowa and Minnesota and the Dakotas were not in one sense greater pioneers than were the men who twenty, fifteen or even ten years ago moved from the West and the North to the South. That the anticipated dangers were never encountered by the latter does not alter the case. They thought they were going into a far and dangerous land, and except for those who, driven by an inhospitable climate at home, sought health here, the majority of the people who formerly came might, if you use the word in its better sense, be called adventurers. Pioneers they certainly were, and very generally in the same financial condition as the pioneers who made possible the creation of the mighty West. Some of them succeeded and some failed, but back in the North and West, whence they came, the failures were promptly widely heralded, while not so much was heard about the successes. But after a while the story of the men who had come South, often with no capital but brains and brawn, was told back at home, at first with some skepticism, since there was still a disinclination to believe that any good could come out of the South. Now, though, these reports are being everywhere accepted. Men are saying if John Doe could go South and succeed, surely we can do so. And just about the time when this conviction was spreading over the country the great prosperity of the West caused such an enormous advance in the price of farm lands that every Western paper is filled with stories of farmers selling their high-priced land at \$50, \$75 and even at \$100 an acre and moving South, where they can buy cheap land and thus repeat the success made in the West. At least 100 Western farmers are today going over the country tributary to the Southern Railway between Washington and the Saluda river looking for farms, while we have just sold to a Western man for \$35,000 cash a noted Virginia farm. Along other parts of the road the same activity in hunting for good farms is going on. But it is not alone farmers who are moving this way in great numbers. Timber-buyers, lumber-opera-

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tors, pleasure-seekers having a competence, and who want now to make a permanent home in a section having such a genial climate as much of the South, and many others are moving this way. The immigration and industrial development work of the Southern Railway has grown so rapidly that it is difficult to keep up with the enquiries from prospective settlers."

Thinking over Mr. Richards' enthusiastic talk about the great southward movement of population, the writer could not but recall the long and oftentimes weary fight of the pioneers in the endeavor to press upon the world's attention the claims of this section, the doubt which even Southern people had of these efforts ever being crowned with success, of the time when the Southern Railway managers determined to take an active part in this work, and called to this uphill fight Mr. Richards, a Western man, whose father, like so many others, had gone from Virginia to make a home in the then almost unknown West, and whose son was destined to play such a prominent part in bringing to Virginia people from all the West, with which he was so closely identified. This work of the Southern Railway Co. has been aggressively pushed for some years, the managers of this company realizing that immediate results could not be secured, but now the whole South is beginning to reap the benefits from the hundreds of thousands of dollars thus expended. The seed have been sown sometimes in unpromising soil, sometimes in good, but the seed-sowing has never ceased, and often the unpromising soil has yielded even a larger harvest than that from what was supposed to be the most fertile. The Southern Railway Co., through its industrial and immigration bureau, has done a great work for the South.

Southern Iron-Making.

Mr. John T. Hamlett of Roanoke, Va., writes to the Manufacturers' Record as follows: "It gave me great pleasure to read Mr. Grasty's recent graphic communication to your journal in reference to the new furnace and other improvements at La Follette, Tenn. It was my good fortune several years ago to visit that locality and make a somewhat extended examination of the resources of that immediate region. This was done simply for my own gratification, and not from any pecuniary or commercial considerations; but I well remember meeting some friends on my return who were experienced and successful furnace men, and almost causing them to doubt my sanity by the emphatic declaration that iron could be made in large quantity and for a long term of years at and around La Follette at a lower cost per ton than anywhere else on this continent, Birmingham not excepted. "Notwithstanding their incredulity, the statement was a conservative and correct one, and I am pleased to see from Mr. Grasty's letter that it is in process of speedy demonstration.

"With your permission I desire to make another statement in regard to the production of good grades of pig-iron at low cost, and that is this: There is a point in Virginia where it can be made on a large scale and laid down in Baltimore, Philadelphia, New York and other Eastern markets for less money than the products of the Birmingham furnaces."

After making deductions under the terms of the bids for the granite dry-dock at Charleston, S. C., it was found that the Continental Jewell Filtration Co. of New York had made the lowest bid, \$916,000, and the contract was awarded to that company.

WEALTH OF WEST VIRGINIA LUMBER.

[Special Correspondence Manufacturers' Record.]

Staunton, Va., October 21.

I have just returned from a trip through the vast forests of West Virginia, the great lumber-producing section of the present and of the future—a section now opening to commerce its boundless stores of natural wealth. This country lies along and beyond the deep narrow valley of the Greenbrier river and its tributaries, from Ronceverte, on the Chesapeake & Ohio Railway, to the headwaters of the stream by that name, stretching about 100 miles to the north.

From Ronceverte through the counties of Greenbrier and Pocahontas the Greenbrier river has threaded its way, hemmed in by high mountain ranges that parallel its course, the narrow valley breaking away here and there into broad level lands. At other points deep narrow ravines pierce the valley and run back into the mountain sides and out into the plateau country that spreads back from the crest of the mountains on either side. It is up this narrow trough and along the banks of this river that within the past eighteen months the Chesapeake & Ohio Railway has laid its tracks and within the year completed a line to Durbin.

Along the entire route an almost unbroken stretch of virgin forest, as yet almost untouched by the woodman's axe, covers the tops and face of the mountains. It was to develop the great natural wealth of this section that the Chesapeake & Ohio people built their line, and now, together with the West Virginia Central and the Greenbrier, Monongahela & Pittsburgh railways, already building to form a junction with the Chesapeake & Ohio at Durbin, every requirement of a rapidly-growing section will be met.

At this early date the course of development has been wonderful. Vast tracts of lumber have been bought, logging camps, planing mills and saw-mills without number are in full operation turning out millions of feet of lumber that find ready market at good prices in all the cities of the East and North. Nearly every station has its saw-mill, stores and neat new residences, while along the line have sprung up within the year thrifty villages and incorporated towns, where money seems plentiful and employment abundant at good wages. No able-bodied man who wants work need be idle. The spirit of the country, too, is in keeping with what is being accomplished, for everyone talks of prosperity and of the numerous industrial plants already established or secured. Indeed, it seems difficult to see what untoward circumstance could check the march of progress in this favored land. With ample railway facilities and an inexhaustible supply of raw material on hand, even the pessimist is forced into silence.

As to the localities along the route where the various timbers most abound, I find them pretty evenly distributed and uniformly easy of access. Nevertheless, certain valuable timber is more or less localized. For instance, from Renick, in the northern end of Greenbrier county, to near Clover Lick, in Pocahontas, a distance of about thirty-five miles, the white oak seems to abound in greater quantities than other of the hardwoods, and is being gotten out and shipped in great quantities, especially as it is found low on the mountain slopes, and is the more easy of access, while on higher ground in the same localities the red oak is found in abundance. There also abounds here, and as far up as Cass, chestnut and chestnut oak, especially the former, a condition most favorable to the establishment of the extract

or tannic acid industry. In the manufacture of this extract not only the bark, but the wood of the chestnut is used, and with it can be utilized the smaller timber and the trimmings from the trunk of the chestnut oak, while the larger logs may be sawed into an excellent and marketable product. There is also amid these woods a liberal mixture of bass woods.

From Cass on up the river to Durbin the higher altitudes are entered and the prospector encounters hemlock in great abundance, and in the still higher valleys and plateaus spruce is found in perfection, large, hearty, with tall smooth trunks, and growing as thickly as the soil will permit. Through these timbers is being pushed an ever-increasing network of railway, short lines or tramways connecting the various logging camps with the main line of railway. At Cass I ascended to the spruce logging camps on the crest of Cheat mountain by means of a seven-mile switchback railway and propelled by a powerful cog engine. The ascent is a pleasant experience, and the view inspiring. From the top, at an altitude of 4000 feet, the interesting phenomena is witnessed of two rivers paralleling each other, yet flowing in opposite directions, the waters of the Greenbrier flowing south and the waters of the Cheat flowing north; so whether the traveler be going "up country" or "down" depends altogether on which stream he follows. The elevation between them is 1500 feet, the higher being the plateau valley of the Cheat—a most remarkable watershed. From this eminence I looked down upon probably the finest tract of spruce timber in the South; certain it is the finest in the two Virginias. Think of a spruce forest stretching in length forty-five miles and in average breadth seven miles, and standing so dense that it appears a vast mass of dark green waving tops as far as the eye can reach—a sight that the unsophisticated admire, and that transfixes the experienced lumberman. Next day, in company with a prospector, we explored the depths of this wondrous lumber land, being shown by the way several finds of coal, the value of which has not as yet been fully demonstrated. That night at our hotel as we discussed the tramp of the day a traveled and wealthy lumberman remarked that he believed there was nowhere in this country such a forest of spruce. Said he: "In Canada there is as much spruce, but it is of smaller growth; in North Carolina it is as large, but not in such abundance." So that the West Virginia spruce stands without an equal. And this is but a part, an infinitesimally small part, of what is to be seen of the lumber in the great forests of this section, where hundreds of tracts stand so thickly dotted that the map of that country cannot indicate them all.

While prospecting the forests and visiting the mills it was my frequent good fortune and pleasure to come upon the logging camps, where I took meals and occasionally spent the night. The men, as a class, are as fine-looking, able-bodied set of fellows as one will find anywhere. They are orderly and good-natured, are well housed, well paid, well fed, and are contented. They have no strikes, for there are no grievances, and their labor is productive, in fact skilled, for the manner in which they fell the trees, haul them to the skidways and load them on cars is an exhibition of skill and thorough knowledge of their work. Sometimes the loading is done from skidways, at other places by means of a traveling steam loader, but in either instance the work is done with dexterity. I have said that the

men are well fed. The cuisine of these camps, if one may so call it, is up to the standard bill of fare at the average hotel, both in quality and variety, and is served by a competent corps of cooks—a head cook and usually three or four assistants.

From the forest to the saw and planing mills is but a short distance over tram or steel roadways. Sometimes the logs are slid down the mountain side right into the sawyers' hands. Here are more skilled laborers, and machinery which is generally of the latest improved labor-saving kind. Nothing goes to waste; even the sawdust and shavings are carried in conveyors to the furnace doors and used as fuel.

At Durbin I find the embryo conditions of a town, a boom not launched as yet, but confidently expected to arrive on time. Just where the site of the new town will be is as yet a matter of some conjecture; whether at Durbin or a little to the north, between that place and Travelers' Repose, is to be determined where the three railroads now centering there focus. They are the Chesapeake & Ohio, the Coal & Iron and the Greenbrier, Monongahela & Pittsburgh railways. Of these, the Chesapeake & Ohio, whose terminus has been at Durbin since May last, is now extending its line a bit north through the gap in an effort to reach a point near Travelers' Repose, where is being established a large tannery for the manufacture of heavy leathers. The Coal & Iron road, owned by Senators Davis and Elkins, a tributary to the West Virginia Central, is already at Durbin; have finished grading and are rapidly laying rails towards the town of Elkins, which place they expect to reach by early spring. Then there is the Greenbrier, Monongahela & Pittsburgh, known as Mr. John T. McGraw's road, and of which he is president. This road has begun work just north of the gap at Durbin, and expects to build north to Horton, where it taps the Dry Fork Railway, a feeder of the West Virginia Central. So the three roads are centering. This railroad activity is concededly caused principally by the large lumber interests which they are seeking to reach and develop. How vast is this opportunity may be judged when it is known that Pocahontas county has forests that cover 90 per cent. of its entire area, and this area is 25 by 73 miles. The Coal & Iron will operate trains this winter out of Elkins over a part of the road, probably as far east as Cheat river, across which stream the bridge is not yet built.

When these three railways complete their plans the business and industry of this section must be great, for notwithstanding the Chesapeake & Ohio has only been actively operating this branch of its line about eighteen months, the results are remarkable. One, and sometimes two heavy-laden freight trains pass over the road every day, and the passenger trains, I have heard, yield a profit greater per mile than any local of the Chesapeake & Ohio except their Loup Creek branch.

The principal points of interest along the line are Renicks, Marlinton, Clover Lick, Cass and Durbin, all places of business thrift and growth. Two of them, Cass and Marlinton, are incorporated, the latter being the county-seat of Pocahontas county, a distinction it has only enjoyed in recent years, the former seat of county government having been at Huntersville, where the original courthouse was built in 1825. Marlinton is picturesquely located at the confluence of Greenbrier river and Knapp's creek in a mountain basin surrounded by lofty peaks. It is an old town; in fact, the settlement at this point is one of the oldest, if not the very oldest in the country. Though an old town, Marlinton has, with the coming of the railroad, put on new

life. In addition to its quota of the lumber business, it rejoices in the recent acquirement of a large tanning plant for the manufacture of heavy leathers. The town has also many new buildings, both for business and residence purposes, and two banks. The courthouse, which was erected in 1894 at a cost of \$45,000, is a credit to the county. It is of brick, possesses architectural beauty, and is modern in design and appointment.

At Cass are the largest lumber interests in the Greenbrier valley. Here are the largest and best-equipped mills, the most extensive logging camps, and a network

of short-line railways that penetrate the district for miles around. This, I am told, is the property of a single concern, the West Virginia Spruce Lumber Co., which is now giving employment to about 500 men. Two years ago this spot was a wilderness; today it is an incorporated town with near threescore of complete buildings, including stores, residences, depot, hotel, mills and other outbuildings. This is the most striking instance of rapid development that has come under my observation in this locality, and I give it to illustrate what is being accomplished.

ARTHUR S. MORTON.

MATERIAL FOR FUTURE FUELS.

By F. L. GRAMMER.

[Written for the Manufacturers' Record.]

The subject of fuels and combustion is one of the greatest practical moment to the metallurgist and engineer, and the practical observations made in considering the economical burning of several millions of tons of coal and coke may be of more than general interest at this time. The inventive tendencies have been mothered by the necessity arising from coal shortage. In a consideration of the merits and demerits of different plans and inventions I trust the following may be of assistance.

We need heat in our homes in the winter to make up for the deficiency in our receipts from the sun. New heat can be obtained by conversion of physical energy or from the union of chemical elements. The driver whipping his arms around his body on the curb corner is transforming work into heat. The most obvious practical source of heat from other energy is electricity. While we hope to come to this some day, and probably will before all the waterfalls and tidal powers and wind currents are harnessed, at present it is Utopian. Its cost is high, and while cleanly and advantageous in heating street cars, it cannot be considered of immediate application in this crisis.

It is to chemical union we owe our main supply of artificial heat. While all substances in their formation or breaking up absorb or give out heat, two are commercially used in their manifold occurrences in nature and arts. They are carbon and hydrogen. Their union with the oxygen in the air is called combustion. Carbon burns to carbon monoxide, a deadly poison, and when sufficient air is present it burns to carbon dioxide, its final form of combustion. Carbon dioxide is not poisonous, but, like water, will drown those immersed in it, and so is indirectly harmful. It is what is given off by our nostrils as the product of combustion in the animal furnace, the lungs.

Every fuel we have contains these elements, but the converse of this statement is not always true. In the world's fuels these elements occur in peat, bituminous or soft coal, semi-bituminous coal, anthracite, charcoal, coke, lignite, wood and vegetable fibers and husks, petroleum, natural gas and artificial gas. Graphite and the diamond, while carbon and practically pure carbon, are not fuel. Now each of the fuels has some particular application and merit, upon which I shall touch briefly and generally.

Peat is dried grass, roots, fibers, seaweeds and vegetable matter turning into another form of carbon. It is found and used in Holland, and also to some extent in New Jersey along the marshy inlets. It contains a great deal of water, and must be dried. It also contains sand and shells and a great deal of ash, rendering it a fuel of last resort in a country over-

flowing with natural resources, as are the United States.

Bituminous coal, the basic fuel of the world, is very variable, and occurs in widely-separated countries. We can say it consists, roughly, of 60 per cent. carbon, 30 per cent. gases and 10 per cent. ash. It is soft, and, like all coal, is formed from wood, subject to geologic action and conditions. Unlike anthracite, occurring where the strata of the earth has been subject to intense action, it occurs more frequently in undulations less abrupt. Bituminous coal, being soft, is liable to pack. The space between the lumps are filled with fine particles, so it is difficult for the air to get through. Where the chimney draft is not sufficient, blowers and fans must be used. These fans are particularly necessary in high mountainous altitudes. If you have not the draft, you must, if the fuel is fine and won't burn in the kitchen grate, make the bed of coal thinner. Such a fire must be fed like a baby, frequently and in small doses. In the burning of this coal the 30 per cent. volatile matter is driven off, and through complex reactions occasional precipitations of downy flakes of soot from the drawn-off gases. No smoke-consumers avoiding this have been as yet unqualifiedly endorsed or accepted. People using bituminous coal would do well to copy after the modern office building—each block or several blocks should have a steam station at one point which distributes heat through the medium of steam or hot water to its section. At the central station a high chimney would carry the objectionable smoke high up in the air. With modern appliances more perfect combustion and less soot would result than if several hundred houses each had their fire and combustion was controlled by inexperienced stokers. This plan has been quite extensively adopted in the North and West, and given entire satisfaction to the patrons, though many of the plants have not been satisfactory to the stockholders.

Coke, which is formed from some bituminous coals by robbing them of their volatile matter, just as charcoal is wood minus water and gas, is an ideal fuel for industrial purposes. It is porous and columnar. The pores assist in access of air and rapid combustion; the columnar structure gives it strength to sustain weight without crushing and without stopping the passage of air. For smelting it is the premier fuel, though as yet not rivaling soft coal as a steam producer. Charcoal is porous, but has not the strength of coke. For some purposes it has an especial value. Both charcoal and coke burn without flame, and are liable to give off a large quantity of the poisonous carbon monoxide. The charcoal fires of Paris have occasioned many deaths, intentional and accidental. Mr.

Zola belongs to a long list. Coke has scarcely replaced anthracite in the industrial fields of smelting, and before the recent combines strong efforts were being made by Western producers to make crushed coke invade the field of domestic consumption. This fuel is readily burned. The yards of the large iron plants are heated by braziers called "Salamanders," which are simply sections of old boilers stood upright and filled with coke. No strong draft is required, and the poisonous gases are not so likely to form in the open air, and if formed they are harmless. The practical point to observe in burning coke is, after the fire has been well started, to slacken the drafts of the kitchen stove or oven. Having different merits and defects from bituminous coal, a mixture of the two will be found to work admirably.

Anthracite coal for practical purposes occurs in only one spot, and that is Pennsylvania. The Colorado variety is slightly different from that of the Pennsylvania. This fuel is hard and free from volatile matter. Upon early discovery it was accepted with suspicion. It is a first cousin to graphite, a form of carbon which won't burn, and so with difficulty ignited. Not being porous, it will not burn like coke. A cupola or furnace using anthracite cannot touch the output of one using coke, and a locomotive burning anthracite must have a larger grate to do the same amount of work than one using bituminous. The lumps are so compact that the heat is not readily carried into the interior. It can burn only from outside in. A fire of such a fuel should have body and thickness to ignite new additions. As there is no flame, it heats by radiation in the grate and by giving up its heat in the products of combustion in a furnace. It will not require such frequent attention as a coke fire nor as many bituminous fires in a grate. In an open grate it is a luxury affording pleasure to all, being cleanly and warm and beautiful. All open fires with large chimneys should be regarded as luxuries, as so much heat is carried up the chimney with the products of combustion. It is estimated that as much as 60 or 80 per cent. available heat is lost in this manner.

Lignite in this section need not be considered. Wood and its relatives, cane-stalks, cornstalks, corncobs, pine cones, walnut shells, etc., make a beautiful open fire. Their use as a fuel is continued for aesthetic reasons only. When burned in the closed cast-iron stove of a century-ago construction and in the type now being made by a St. Louis concern they are still an economical fuel in many sections thinly populated and several miles from the railroad. In the open fire wood is an encourager of pipe dreams and ideals rather than a producer of physical warmth. Burning with a flame, it is obvious that unless the flame has something to heat it will go up the chimney.

Petroleum is a hydro-carbon, showing by this name that it contains both fuels, hydrogen and carbon. Burnt with a wick in any of the accepted burners of the day it forms water and carbon dioxide. A person who uses one of the popular oil stoves sitting out in the middle of the room is getting about all the heat economy possible. It is complete combustion, and the room gets it all. Now, hydrogen is a more potent fuel than carbon, and a given weight of it burning will produce more heat. When we consider that all the coal is not carbon and that all the carbon don't burn, some being lost in the ashes, and then again that when it does burn we don't burn it all to its final form of carbon dioxide, and finally, that, as we don't wish to be poisoned, we must let the products of combustion go up the

chimney, this hydro-carbon petroleum would seem to be the fuel par excellence, i. e., burned as aforementioned, and coal would seem to be not in it. Indeed, petroleum is a valuable fuel, and will be used more extensively. The possibilities of complete combustion in the Argand burner and the Bunsen burner for gases and their modifications by Fletcher of England put the ordinary methods of coal combustion in the antiquity class. But the stove in the middle of the room is all wrong, and yet I have seen it in physicians' homes and in the home of a very successful and eminent metallurgist. The products of combustion coming out, if they do not poison the air, exhaust its vitality, dilute the oxygen and cause those in the room to feel drowsy and inert, then become flabby and pale. Such an atmosphere interferes with the draft of the human furnace and prevents rapid combustion; the fires get low. Such an oil stove would probably give more than five times as much heat from one pound of petroleum than could be obtained under good circumstances from one pound of coal, and could be burned at a financial profit when oil is ten cents a gallon if coal was sold at \$5.70 per ton. If the oil were soaked on bricks and burnt in an open grate it might stand off anthracite at \$14 or \$15, though anthracite would probably be more satisfactory. Oil burnt against refractions in a kitchen range might rival anthracite at \$9 or \$10 for continuous performance. In possibilities of quick resumption and cessation oil and gas offer a great many possible economies to the thrifty not considered in the above.

Natural gas and artificial gas, both containing hydrogen, are intense fuels. They burn with a flame, and so should be intercepted by a mass of refractions, such as clay or fire-brick, intercepting the heat as the Welsbach mantle intercepts the gas jet. This body of incandescent or glowing refractions prevents some of the heat going up the chimney and radiates a large amount out in the room. But even this is extravagant, and during a temporary decrease of natural-gas supply new methods have obtained. Now the gas, while still mixed according to the inventions of Bunsen, is allowed to come out of a number of small holes, which play the jet against asbestos fringes attached to an asbestos board almost vertical, and the chimney opening, instead of being large enough to allow a man to pass through, has been contracted to a small slit.

Indeed, after all is said and done, the combustion of coal is crude, the boiler and engine unfit tools for the artisan with prodigal resources. The anthracite supply is by man calculated as being only good for seventy-five years more, so our posterity must commence to invent or must use bituminous coal. A city so peaceful and immaculate as Baltimore must reluctantly enter the class of Cincinnati, Chicago, Cleveland and Pittsburgh, grimy, dirty and sunless, but it looks like that unless coke or oil do the work.

One thing is sure, no one need freeze. Soft coal with coke is a combination that can be made to work almost anywhere. It may mean that our housekeepers must be more thrifty if they wish to appear neat, and that they may have to experiment to find the best proportion of coke and coal for their furnace.

At a meeting of the executive committee of the Southern Vehicle Association last week at Charlotte, N. C., it was decided that the next meeting of the association should be at Richmond, Va., in April, 1903. It was reported that the manufacture of pleasure vehicles in the South has increased from 2500 a year to 60,000 a year in the past seven years.

REPORTING COTTON CROPS THROUGH GINNERIES.*

By S. N. D. NORTH, Chief Statistician, Division of Manufactures, U. S. Census.

No commodity is followed so closely at every step in its progress from the seed planting to the mill door as the American cotton crop, and the available supplies of no other crop are known with the accuracy which marks our information regarding cotton. The trade journals and the cotton exchanges expend thousands of dollars annually for information of the movement during each week in the year. Trained statisticians compile and weigh the figures for them. The great railroads are enlisted to return accurate records of shipments and bale weights. Beyond this, the statistical bureau of the United States Department of Agriculture maintains an organized force of correspondents throughout the cotton belt, reports from whom permit the forecasting of the coming crop from month to month, with an estimate of acreage and a measurement of weather and other conditions at each stage of cultivation. The federal weather bureau supplements these monthly reports by weekly reports which photograph the condition of the crop with the fidelity of a camera. No child grows up at its mother's knee with a watchfulness more assiduous, more ceaseless, more solicitous than marks the growth of every American cotton crop. Thus the power and the opportunity of the speculator are minimized at every point.

If, despite these safeguards, there frequently arises uncertainty as to what the crop is to be, such as is now witnessed, that uncertainty is due to nature's irregularities. No human being can tell a week in advance how rain or sunshine, or the lack of the necessary supply of either, will affect the growing crop, and this uncertainty gives the cotton speculator his chief opportunity. There have occurred some remarkable errors in the estimates of the Southern cotton crop, the effect of which upon the market has been enormous.†

No one has ever claimed that the existing methods and machinery for ascertaining the cotton crop are perfect, or even approximately so. They are the best that can be devised in the absence of an actual count, but they are, in fact, only an elaborate and well-based system of "intelligent guessing," as it was called by Senator Tillman.‡ It is proposed to substitute for this "intelligent guess" an

*From a paper before the New England Cotton Manufacturers' Association.

†Among the serious errors referred to may be mentioned the crop of 1899, which was by some of the commercial agents estimated at 2,000,000 bales in excess of what the commercial movement showed the crop to be. For the crop of 1901 an error both ways seems to have been committed. Basing estimates upon acreage and early weather conditions, the prospective yield in the spring was estimated as high as 12,000,000 bales, while under the scare of very unfavorable weather, conditions subsequent to the pitching of the crop, estimates were made as low as 9,000,000 bales.

Referring to this latter crop Senator Culberson, in the debate on the permanent census office bill in the United States Senate on February 17, 1902, said: "The price of cotton continually declined for months preceding the month of November. It was due to the estimates of the yield of cotton throughout the world, and especially in the United States, made by other parties, and it was due in part, perhaps, to a failure to report accurately by the Agricultural Department, and during the month of November—I think it was November—the Department of Agriculture made an estimate of the yield of cotton in the United States, and it was to such effect that instantly the price of cotton went up \$2 a bale, or about that."

‡Congressional Record, February 15, 1902, page 1847.

actual count, obtained from the only source whence such a count can come quickly—namely, the ginneries of the cotton.

The census office was led to this experiment in the first instance by the frequent complaints of the cotton-growers themselves, that their crop was not fairly reported through the methods employed by the various commercial agencies, and that the government ought, in view of the importance of the cotton crop, to supply a check upon these commercial statistics, not an official estimate, such as the Agricultural Department makes, but an official count.

Some of the criticisms upon the commercial estimates may be summarized:

1. They measure the crop by its commercial movement only, and hence it is that not until the season has actually closed, upon September 1, a date arbitrarily fixed, is the volume of the crop harvested the previous fall definitely determined.

2. They take cognizance only of such part of each year's crop as actually comes to market, leaving as an unknown factor the quantity held back by growers and others. Mr. Hester of the New Orleans Cotton Exchange estimated in 1900 525,000 bales of old cotton unmarketed in 1898-99 and coming into sight for the first time in 1900. This was 4.7 per cent. of the crop reported for that year. Thus the commercial estimate is not an estimate of the crop of a given year, but may contain parts of the crop of two or three seasons, with no account whatever of the unmarketed crop of the season to which it relates.

3. They are open to the danger of constant duplication, which may occur in distinguishing the net receipts of the several ports—that is, the direct shipments of the interior—from the gross receipts—that is, shipments from one port to another port and which have thus been twice reported.

4. There is the same danger of duplication in the record of the "overland" movement. The machinery by which record is kept of all cotton moved by rail out of the cotton belt, and differentiated from the cotton so shipped to seaboard points, is extremely complicated.

5. A duplication occurs in the double reporting of cotton samples, commonly known as the "city crop," estimated to equal 150,000 bales in 1901.

6. Again, the consumption of the Southern mills, another separate item in the commercial statistics, is necessarily an estimate, based upon the haphazard replies of the manufacturers.

7. Finally, the chief and the fatal weakness of the commercial system or method of estimating the cotton crop lies in the fact that it supplies nothing tangible and definite as to its actual volume during and immediately subsequent to the harvesting, say from October to January, and these are the months when exact and trustworthy information is chiefly important to the grower and the legitimate consumer of cotton. This is the period during which the staple is passing from the grower's hands, and the value of his crop to him is determined. It makes no difference to him what rise or fall may occur thereafter; it benefits or hurts him none at all. It is at this critical time that the census reports will be made, and if they can be correctly made they will disarm the speculator at the time when he can do the most mischief to both grower and manufacturer, and will become a permanent

and most effective check against all commercial estimates. This check will not stop these estimates, but will compel the utmost caution on the part of the estimators.

These elements of uncertainty and delay in the commercial estimates are so numerous and so important that it appears safe to say that we can never be sure that the commercial figures of September 1 are within 300,000 to 600,000 bales of the actual crop.

These were the circumstances under which the census office was led to attempt in 1900 an absolutely new experiment in the statistical measurement of the cotton crop. It has been urged by various parties for many years that it was possible to secure a quick and accurate count of the cotton crop through the agency of the ginneries. Every pound of cotton must go through a gin before it can be commercially marketed. As a matter of fact, practically the whole of season's crop is found to have been thus cleansed and baled, by the average date of January 1, for the cotton belt.

In order to test the question, the census enumerators were given a special schedule in 1900, upon which they were instructed to report the number of bales of cotton, and their average weight, ginned in the previous year by every ginnery in their several districts. The result was remarkably satisfactory for a first attempt, and when the totals were subsequently compared with those of the division of agriculture, giving the returns of the planters of their actual growth, there was found to be a variation of less than two-tenths of 1 per cent.*

Encouraged by this success, the census office undertook in 1901 to make a similar count of the crop of that year, communicating directly with the ginneries by mail. It was a hazardous experiment, and but for the co-operation of the Postmaster-General must have failed. By his direction every postmaster in the South became an agent through whom reports were obtained from practically every ginner who neglected to respond to the office circulars. This second report was thus completely successful, and the reception ac-

*Bulletin 58 of the division of manufactures contains an exhibit of the quantity of cotton ginned in connection with the marketing of the crop of 1899. In comparing the data secured from the schedules of the division of agriculture with those of the division of manufactures there is found to be a very close general agreement, excepting for the small group of twenty-three counties in two States. They are: Adams, Attala, Bolivar, Claiborne, Itawamba, Kemper, Lafayette, Lauderdale, Neshoba, Oktibbeha, Sharkey, Tate, Tunica, Union, Warren, Washington, Wilkinson and Yazoo in Mississippi, and Fayette, Hardeman, Lauderdale, Shelby and Tipton in Tennessee.

Except for these twenty-three counties the returns from the two divisions, secured from two independent sources, show a variation of only 17,512 bales of 500 pounds. This variation is less than two-tenths of 1 per cent. In the twenty-three counties named there was a further variation of 71,442 bales, or a total of 88,954 bales, or 0.95 per cent. This small per cent. marks a greater degree of accuracy in both reports and a smaller variation than was deemed possible before the work of the enumeration of 1900. Evidence gathered by special investigation made by the division of agriculture in the twenty-three counties specially referred to indicates that in those counties the division of manufactures failed to secure reports from all gins. No evidence of a similar character was discovered in any other part of the country. This fact may be considered almost conclusive proof that the system of securing cotton reports from the gins gives promise of furnishing statistics of cotton production with greater accuracy than has been attained by any other class of annual cotton statistics. In addition that system will enable the authorities in charge to publish such statistics much earlier than those secured by any other method.—Report on Agriculture, Twelfth Census, Part II, page 412.

corded the statistics throughout the South was most flattering to all who were concerned in their preparation.†

A third report, equally successful, covering the crop of 1901, was published in the form of an advance bulletin on April 12, 1902, four and one-half months earlier than the public could be apprised of the size of the crop, measured by its commercial movement.

In the meanwhile Congress, impressed with the success of these two canvasses, had enacted a law establishing a permanent census office, and one section of this law instructed the office hereafter to make an annual canvass of the cotton crop through the ginneries, with an additional provision for preliminary reports at brief intervals.

It ought to be possible, with the census machinery now organized, to trace and record practically every bale of cotton ginned in the cotton belt, and to publish the total by a date as early as March 1. The commercial movement of this crop can then be followed in the manner now pursued, and in such a way that the cotton world will know from week to week exactly what proportion of each year's crop is still in first hands. This is information never yet possessed, and of the highest economic importance. In a word, if the census office shall successfully achieve what it has set out to do, the statistical situation of cotton will be, for the first time, accurately known, and the opportunity for speculation and manipulation, which is only present when uncertainty exists, will have been reduced to a minimum.

For the crop of 1902 the census office will issue three reports. The first two will cover the cotton ginned to and including October 18 and December 13, and the final report will cover the total quantity ginned from the growth of 1902.

Realizing that the collection of the data for these reports comes at a season when the ginner's time is greatly taxed, and appreciating the necessity of quick returns for hurried reports, the census office has located an agent in each county containing ten or more ginneries, who will visit each ginner and secure a report from him of the quantity of cotton ginned to the dates above named. In all cases where practicable, counties having less than ten ginneries have been combined with adjoining counties having more than ten;

†It led to the adoption of commendatory resolutions by many organizations of cotton-growers, of which the following, adopted by the Georgia Cotton-Growers' Protective Association, in convention at Macon, Ga., on July 12, 1901, is a sample:

WHEREAS, it is vitally essential that some feasible method should be inaugurated for annually securing accurate statistics of the cotton crop as grown in the United States, by which the cotton-growers may be able to defend themselves against the present detrimental tendencies of manipulated estimates; and

WHEREAS, the director of the twelfth United States census has announced his willingness to make annually a complete canvass of the cotton ginned in the United States through the agency and co-operation of the ginneries; and

WHEREAS, we believe that such an annual canvass will result in more accurate and satisfactory statistics of the actual cotton crop than have heretofore been obtained, and thereby eliminate all fictitious influences; therefore, be it

Resolved, That this convention heartily endorses the plan of Director Merriam for perfecting and modernizing the statistics of the cotton crop.

Resolved further, That this convention urge the cotton ginneries throughout the cotton belt, whose interests are identical with those of the grower, to co-operate with the census office in its effort to collect true annual statistics of the cotton crop by making early and accurate replies to its request for information, to the end that the true interests of the producers may be properly promoted and protected.

but where this cannot be done, the office will depend upon the co-operation of the ginners to report by mail. Throughout the entire cotton belt there will be 648 of these local special agents of the census office. Six hundred and forty-eight counties have been individually organized, and in combination therewith fifteen more, making a total of 663 organized counties out of 761. Within this organized territory 90.4 per cent. of the crop of 1901 was grown. In the ninety-eight unorganized counties there were for the crop of 1901 only 280 active ginneries, and of a very small capacity, ginning only 63,993 bales, or six-tenths of 1 per cent. of the crop grown in that year. The ginners in these unorganized counties will be furnished report blanks, upon which they will be requested to make reports simultaneously with the local special agents in the organized counties. It is evident that the census office has a very complete organization, which guarantees results.

Whatever of error may have crept into the reports of the census office previously issued through failure to keep in touch by mail with every ginners throughout the country will be corrected in the future, as these local special agents will be charged with the duty of reporting all establishments to the census office, together with the quantity of cotton ginned by them. The census office has made diligent effort in its canvassing of the ginners by mail for the past two crops to secure reports from each and every active ginners, but as these reports were made voluntarily by the ginners and local postmasters, there exists a possibility of error, measured on the part of the ginners by the degree of their willingness to report without remuneration, and on the part of the postmasters by their ability to secure the information. With the organized system under which the census office is to act in the future these doubtful elements will be removed, as the local representatives of the census office will be paid to properly discharge their duties.

Following the successful launching of the actual count of the cotton crop, it will be possible for the census office to take a further advance step in line with the demand of the producers and manufacturers of cotton.

By a similar investigation, utilizing in the South the same field organization, it will be possible to ascertain at given periods the United States mills' takings, which, with the foreign shipments, will indicate the extent to which the supply is being drawn upon.

Thus it will be possible to know in the very early spring the quantity of cotton grown in the previous year, the actual mill takings to given dates, the foreign shipments, and hence the surplus, as well as the actual quantity of cotton carried over from year to year.

I would not minimize the difficulties in the way, and I agree that it will take several years to thoroughly demonstrate the practicability of this plan of taking an annual census of the cotton crop. In 1900 the census office found that there were in existence in the cotton belt 29,620 cotton-ginning establishments, of which number 6468 were public ginneries, 2863 were operated for the single plantation only, and 20,289 were operated in connection with plantations on public account. So rapid are the changes going on in these establishments that the census list, which is constantly undergoing revision, averages a thousand changes every year.

The gin in the South is an important factor in the local industrialism, much the same as the grist mill or the saw-mill, and indeed it is a common thing to find all three of these industries carried on under the same roof by one man. But the machinery for ginning cotton has of late been

so greatly improved, and is now so comparatively expensive, and the cost of ginning is so much reduced by the newer processes and machinery, that we find a marked tendency toward the disappearance of the small gin, especially the plantation gin, and the concentration of the business in new and larger establishments, where large quantities of cotton are handled more expeditiously and more cheaply. It is the same evolution which is visible in all lines of manufacture, and it is progressing more rapidly in the cotton-ginning business, perhaps, than in any other.

Thus we now have large companies controlling many ginners in different sections. The American Cotton Co., owning the Bessouette, or roundlap system, directly controls about 100 ginners, and indirectly, by leasing baling machinery, some 200 others. The Planters' Compress Co., owning the system known as the Lowery bale press, controls as many as 100 ginners. The combined outcome of the plants operating the Bessouette presses for the crop of 1900 was 494,712 bales, and that of plants operating the Lowery system 273,380 bales. Furthermore, a large and increasing number of cotton ginners is controlled by the cottonseed-oil companies and the cotton-compress associations. These consolidated conditions represent large investments of capital, and consequent enlargement of plants. One of these large ginners, yielding from 20 to 100 bales per day, takes the place of four to ten of the old plants. Economic conditions demand and improved machinery makes possible a continuation of this tendency toward consolidated methods of handling seed cotton. It is estimated that the supplanting of the old plantation ginners by the larger public establishments has progressed so rapidly during the past five years that the number of small ginners has decreased more than 50 per cent. It is clear that the number of ginners will continue to decrease, and that the facilities for perfect reports will increase as the business becomes more and more concentrated.

Thus the inquiry upon which the census office is now embarked is of vital interest not merely to the American manufacturer of cotton, but to the manufacturer and dealer all over the world. All possible assistance and encouragement ought, therefore, to be gladly rendered by the members of this body, by the cotton exchanges of the country, and by the cotton-growers, whose stake in its success is, perhaps, the largest of all, since they are the men who suffer most from the manipulation of the market.

Dismal Swamp Peat.

A very prominent and conservative expert recently called the attention of the Manufacturers' Record to the possibilities of the Dismal Swamp canal as a source of peat supply for fuel, which, according to his statement, would furnish the basis of very large operations. This peat, he states, could be so prepared as to make it suitable for all fuel purposes, and the supply is reported as practically inexhaustible.

The University of Tennessee at Knoxville has issued the prospectus of its short courses for farmers of practical instruction in agriculture, animal husbandry, horticulture, dairying, poultry-raising and mechanical arts. The term will begin January 2 next and continue until March 14. As many young men cannot secure all the information they desire in a term of ten weeks, the course has been extended to two terms of ten weeks each, so that those who make certain progress in the first year may return another year and in a measure complete their studies.

IN THE BIRMINGHAM DISTRICT.

Many Improvements and Additions for Industries Contemplated.

(Special Cor. Manufacturers' Record.)
Birmingham, Ala., October 20.

The effect of the settlement of the miners' strike is felt all over the district in the resumption of work. All the furnaces which have been out will be back in a few days; in fact, all are back now save two, one at Bessemer and one at Alice. The mill of the Alabama Steel & Wire Co. went on today, after an idleness of three weeks, making rods for the nail mill, which will be set going on all time possible Wednesday, in order to get up with orders, which have been running behind because of a shut-down caused by shortness of fuel. The miners are at work, and the output is normal.

The iron market is in the same strong condition that has characterized it for some weeks. Spot No. 2 is held at \$25 if it can be found at all, while the following scale prevails for delivery later: No. 1, \$21; No. 2, \$20 to \$21; No. 3, \$18 to \$18.50; No. 4, \$17 to \$18; gray forge, \$16.50 to \$17. There is a little ease-up in the fuel situation, though it is by no means plentiful; coke is way up in the neighborhood of \$6 to \$7, and scarce. Coal is held back in shipments because of lack of cars. The railroads give encouragement to the hope that the car situation will be relieved to some extent.

There was a slight delay caused at the Trussville furnace of Buek & Co. last week, but it was repaired at once, and the output was hardly affected. The output is now 120 tons a day. The Williamson furnace, recently bought by Frederick Dimmick and associates, will be put in blast this week or early next. The fuel needed to run several weeks has been piled up at the furnace. The output, as noted before, will be eighty tons.

The work at the rolling mill has assumed more than normal volume. The plant has resumed operation in the departments delayed by the blaze, and a big sheet mill, idle for several weeks, has been started. The aggregate output is very large. Work on getting the buildings back in shape is progressing nicely.

It is understood there will be a number of improvements on the properties of the Tennessee Coal, Iron & Railroad Co. in this district, and at a cost of over a million dollars. According to the reports, the five furnaces are to be rebuilt one by one as they are put out for repairs and fitted with skip hoists and modern steel stock bins. The big No. 3 mine is to be fitted with electric haulage systems and made fully modern. A modern pumping engine is to be put in near Ensley, which will cost \$40,000. The new purification plant at Ensley is completed and in working order, and grading for the structural-steel plant, which will cost \$100,000, is progressing. The ore mines are to have the best known means of raising the ore, and the employees are to have comfortable houses. President Bacon of the Tennessee Company is a stickler for cleanliness, and forces everything that can possibly be done to this end. It is said that this remark was often made of him by his friends in the Michigan iron-ore district: "An eagle can fly over the iron-ore country and tell every Bacon camp. The houses are neat, the yards laid off and kept free of trash and leaves, and the occupants careful of the general appearance of the camp."

W. H. Hassinger, Southern manager of the Republic Iron & Steel Co., has returned from a trip to New York attending the annual meeting of the company at Jersey City. The reports of the company were such as to make the officers very proud of the records made. All the prop-

erties of this district are in good working order, and the big furnace recently put to service at Thomas is making over 300 tons of iron a day.

Capt. T. G. Bush, president of the Alabama Consolidated Coal & Iron Co., is in New York and Baltimore this week. At the former place he will attend a meeting of the Shelby Iron Co. directors, and at Baltimore a meeting of the Alabama Consolidated Coal & Iron Co. directors. The work of these companies is in good shape in the district. The Shelby furnaces are making something like 130 tons of charcoal iron a day, and the Alabama Consolidated is pushing all its furnaces. The big Gadsden stack is going ahead, and seems certain to be ready by the stipulated time, January, and the announced intention to build fifty ovens at Mary Lee will likely be increased to seventy-five. The Alabama Consolidated is the only company in the district having any coke to sell lately, and the fact that it has disposed of some at over \$7 a ton within the past few weeks indicates what a good thing it is for them.

At its meeting here last week the Southern iron committee decided that the increased freight rate announced some weeks ago would not go into effect just now, the action being taken at the urgent request of the iron-makers of the district. It was decided that all sales made prior to September 5 be shipped at the old rate; after that the advance will apply. This is a saving to the iron-makers of \$250,000. The advance, if it went into effect now, would greatly handicap the iron men, for the sales were made when prices were low, and it will be some time before the sales at new and larger prices are to be shipped.

The city council has allowed a franchise for a hot-air plant to be erected by the Birmingham Railway, Light & Power Co. President Jemison would not agree to give out any of the details, but it is understood hot air for house-heating is to be furnished at a nominal sum, the immense amount of steam from the various plants of the company to be utilized. The franchise runs for thirty years, and work on the plant is to begin in three months and be finished in six months.

An agreement has been made with the water company to get in a filtration plant. They are to be in, one in a year and the other in eighteen months.

A well-known and posted iron man, in talking of the cost of iron, says: "Few people take into consideration the increased cost in making iron. To summarize, it would result about as follows: Coke, \$10.50; ore, \$5; limestone, 50 cents; labor, \$1.25; supplies and incidentals, 50 cents; total, \$17.75. This does not take in wear and tear and insurance, and leaves nothing for betterments. It is true many furnaces own raw materials and operate at less cost, but the man who has to buy all his raw material is 'against it up.'"

There is a well-established rumor that the North Alabama Furnace Co. will build another furnace at Talladega.

The Hawkins Springs Water-Works Co. has been incorporated to build a water-works system to utilize the large springs at Hawkins Spring, near the city. It is not known whether the water will be sold to Birmingham or Bessemer, but it is thought for the latter. The incorporators are Morris Adler, president; S. E. Thompson, vice-president; S. M. Adler, secretary and treasurer. The Adlers are owners of the Bessemer water-works, and it is very likely the new move is in the interest of that city.

There does not seem any doubt that the two furnaces and a steel mill to be erected by the Alabama Steel & Wire Co. of Ensley will go to Bessemer. There is

a story current, however, that Gadsden has again gotten into the scramble, and is trying for the plants. This is not given much currency.

Some idea of the value of Jefferson county to the State may be gathered from a study of the tax figures. This county shows a valuation of \$44,915,034. The nearest approach to this is Mobile, with \$22,716,231. Montgomery comes next, with \$21,211,939. These are the only counties counting their millions of valuation in two figures. The total valuation for the State is \$295,613,355; net increase over 1901, \$10,990,398; increase for Jefferson county for 1902 over 1901, \$3,138,920.

H. W. L.

The Iron and Metal Trades.

In its review of the week the Iron Age says:

"Hopes of consumers of pig-iron that there would be a more plentiful supply of metal now that the anthracite coal strike is over may be doomed to some disappointment. The actual tonnage of iron made with anthracite is comparatively small, and it may be some time before the furnaces themselves are assured of a sufficient and regular supply to resume. Quite a number of stacks in the Lehigh and Schuylkill valleys and in New Jersey use coke exclusively, and others take a heavy proportion. The resumption of mining will release some furnace and foundry coke, and will thus do some good, but the real crux of the fuel situation lies in the trouble in the supply of coke, which has developed such extraordinary movements like the shipment of Colorado coke into the Chicago district.

"So far as the future is concerned, the furnacemen of the Central West are facing with increasing dread the possibilities of railroad blockades during the winter months, and there is little hope that steady pig-iron production near the maximum can be realized until the spring. Consumption, of course, usually falls off in the winter months, but the chances are that in spite of this we shall keep short and shall have to depend upon importations quite largely. In fact, the report is current that there has just been purchased for delivery at Baltimore a block of 25,000 tons of foreign Bessemer pig-iron.

"The outlook for further importations of steel is not favorable. Many of the mills which used imported steel will find it difficult to pay current prices even on a \$6.72 duty and come out whole rolling wire or sheets at the present reduced market values.

"While thus the situation in the cruder materials is very strong and promises to continue so, the tendency in many finished lines is downward. Quite recently bars, both East and West, have displayed some weakness, while the lower prices on wire, sheets, tinplate and pipe are seriously affecting smaller plants which do not control their own raw material. Their position is becoming a very difficult one in many cases. Of course, this does not mean that actual consumption has fallen off. The situation in this regard is difficult to gauge, first, because consumers and dealers, having received ample warning, have reduced their stocks to a minimum, so that their present rate of purchases, which is generally pronounced heavy, does not accurately reflect consumption. The diversion of tonnage from the smaller mills to the larger interests is also apt to lead to somewhat misleading conclusions, if viewed from the side of the great producers. Reports of misery on the one hand and of abundance on the other must therefore be weighed with caution.

"If it were safe to draw inferences

from what is going on in the heavy branches, little doubt would be felt. It is time that deliveries were getting a little better in structural material, but in steel rails the pressure is very heavy, and further purchases from foreign makers are announced. The plate trade is congested. The sum total seems to be that there is work enough urgent in character to keep up the pressure upon the cruder products to the utmost.

"In the metal trade the advance in the price of copper is creating some interest. There is no evidence as yet that the powerful interests which have resisted any advance have changed their position."

To Make Steel Castings.

A movement is under way in Baltimore to establish a large factory for the manufacture of steel castings near the South Baltimore Car Works at Curtis Bay. Charles T. Crane, president of the Farmers and Merchants' National Bank, and others are interested in the plan, which, it is reported, was suggested by two prominent steel manufacturers.

For Would-Be Southern Investors.

Editor Manufacturers' Record:

I note your very interesting editorial in reference to the increasing tide of settlers coming South, and the concluding paragraph sounds a note of suggestion to those who are engaged in legitimate real-estate work, "that of preventing the mistakes which may be made on the part of would-be settlers and investors misled by a class of promoters who usually may be depended upon to make hay for themselves while the sun shines without rendering due returns." Unfortunately, there is just such a class of people all over this country, and during the past ten years I have had ample opportunity to observe their methods, and do not wonder that many people are shy of dealing with what is termed "real-estate sharks," who cast discredit on a calling which ought to be among the highest in the land. Real-estate agents come next to and often precede the railroads in developing new territories, and have paved the way for many a countless fortune to those who have been guided by the suggestions and advice of reliable brokers. Observation and experience have taught me that real-estate men who are established in the business as a business are universally honest and enjoy the confidence of the community in which they live. There is no business wherein it pays better to be straight, and one must be inherently honest to long succeed as a broker in any business, but there is a class who dabble in real estate that are always ready to "put you on to a good thing," while arranging for a rake-off for themselves. They get options to themselves or a partner, then steer you on to it in a friendly way, and when you have bought you often find you have paid two or three commissions, and then you begin to abuse the real-estate fraternity in general terms. Usually it is some particular friend or one that you have known all your life that gets the cream on a transaction of this kind, while the local real-estate man only gets a legitimate brokerage.

If the homeseeker or the investor could be induced to only deal with those who are established in legitimate business and possessed of the confidence of their local community, it would accelerate the movement toward the South no little. Let them beware of promoters who "have been South and found a good thing." Let them deal with brokers who will put them in immediate touch with the real owner, and they will have far less cause to find fault. I can name you many cases of nothing short of robbery that have come under my ob-

servation, and in each case the real culprit was from the home or vicinity of the victim, yet the people of the South bear the blame. "We lost our money down South," say the victims, and they are forever shy of anything that comes up from this quarter. Now, one remedy for all this trouble would be for Southern real-estate men of good repute to get together in an organization of such character that would guarantee square dealing on the part of each member, so the homeseeker or investor that comes South may have implicit confidence and be made to realize that their interest will be protected by the organization. It seems to me that such a thing is feasible, and should be taken up. My firm, for one, would like to join a movement of this kind, and put up the necessary bond. Cannot the Manufacturers' Record take this up and promote such a movement? It seems to me that an organization along this line would prove a powerful agency along the line of the South's development.

EDWIN BROBSTON.

Brunswick, Ga.

For Compulsory Arbitration.

Editor Manufacturers' Record:

In your issue of October 2, on page 184, I read an article written from this place with the heading "Iron—Steel—Coke. Great Activity in the Birmingham District and Many New Enterprises." I am tempted to say a word in regard to this district. There never was a day in its history when its prospects were brighter, when its industrial enterprises seemed on a firmer foundation for prolonged prosperity, than in the recent past. Within the last week, however, 4200 coal miners, without cause for complaint against operators in regard to the payment of wages, have been ordered to lay down, and have laid down, their picks and spades and are in enforced idleness. Our daily papers have denounced it as the most unjustifiable strike in history. And the fact that a very large number of coal miners are thus in enforced idleness, in many cases against the will of a large number of men who mined the coal, at the command of the officers of organized labor unions, demonstrates the absolute necessity of some legislation to bring about compulsory arbitration for the settlement of all such disputes. If by some conservative, wise legislation the general public could be given assurance that whenever there is a disagreement between laborers and capitalists such disagreement should be immediately referred to and settled by a competent board of arbitrators, there is no telling how much confidence would be created, inviting unlimited investment in our industrial enterprises. Some such legislation is absolutely demanded for the general public good and to preserve and perpetuate the industrial and commercial prosperity of all sections of our country.

JAMES E. WEBB.

Birmingham, Ala.

The general passenger and ticket department of the St. Louis Southwestern Railway Co. has just issued an attractive pamphlet entitled "Fortunes in Growing Fruits and Vegetables Along the Cotton Belt Route." It sets forth, with half-tone illustrations, the growth of the industry of raising in Northern and Eastern Texas early fruits and vegetables for shipment to Northern markets and the opportunities for an extension of that profitable business. This region is close to such markets as St. Louis, Kansas City, Denver, Chicago and Hot Springs, and figures representing the results of the crop of 1902 demonstrate the profits that are possible. For example, ninety acres in peaches at Tyler, Smith county, Texas, yielded a net profit of \$3600; seven acres of tomatoes

at Jacksonville, Cherokee county, produced 328 crates at a net profit of \$2360, and one acre of Irish potatoes at Tyler produced 366 bushels at a net profit of \$146.

Machinery in South Africa.

Correspondence to England from South Africa, discussing trade conditions there, says regarding machinery:

"The only serious competition will come from America. It does not necessarily follow that the machinists of Lancashire and the Black Country should throw up the sponge before the first round. They can learn many lessons from the enterprising American and creep into his footsteps.

"One reason why the costly mine machinery has, in late years, come largely from the United States is this: The kind of machine used on the Rand is to all intents the same as has been used in the silver mines of Nevada for many years, and competition there evolved the fittest, so that when these fields began to develop there was the plant ready for shipment in New York; but, in spite of low ocean freights, the American has been gradually pushed back until we find—what? That Messrs. Frazer & Chalmers, the one-time almost monopolists of mine outfits, have started huge works at Erith for the production of these heavy fabrics. Thus the trade has largely migrated to England, and solely because British materials cannot be equaled in the world.

"No mine ever starts unless the ground has been tested by a 'bore hole,' drilled, it may be, through a couple of thousand feet of rock in search of the precious reef. The drill, which is a disk studded with rough diamonds, eats its way downward with a rotary motion, and in its hollow interior lodges the 'core,' a slender cylinder that is now and again examined for traces of banket, or gold-bearing rock. Now, why is it that the British firms cannot make headway with their drills against the Americans?

"There is not a British drill at work on the Rand. They are heavy, cumbersome, slow. The American machine is light, compact, easily worked. Of course, diamond drills have been in use so long in America that the type has been perfected, but experts tell me there is no earthly reason why the same or a better machine should not be turned out from a Lancashire or Staffordshire workshop. As drills cost from \$4860 to \$24,300, according to the length of rods, there is money waiting to be earned.

"No one need be surprised to learn that America walks off with the lion's share of trade in food supplies. The enormous grain stores of the West, the abattoirs of Chicago and the colossal tinning depots of that country send their surplus here on terms of cost and freight that renders British competition hopeless even if Great Britain were a producing center instead of a world's entrepot."

Tobacco at Wilmington.

The Chamber of Commerce of Wilmington, N. C., is moving actively for the establishment in that city of a tobacco warehouse, a prizehouse and a stemmery. At the last meeting of the Chamber a committee was appointed to obtain subscriptions, and practical arguments were advanced in support of the plan. Mr. W. E. Worth estimated that within a few years the business would be worth \$300,000 annually to Wilmington in the employment of labor alone, and that the possible export trade was another important factor to be considered. Mr. George O. Gaylord dwelt particularly upon the increase in the value of lands near Wilmington through an extension of tobacco culture, and upon the holding of the trade

of nearby farmers. Mr. M. W. Jacobi mentioned many letters in favor of the plan. The capital required for it is between \$25,000 and \$35,000.

Trade With Russia.

In a letter to the Manufacturers' Record A. Segebarth of St. Petersburg, Russia, discussing possibilities of American trade with Russia, writes:

"The average Russian consumer is accustomed to buy on long time, that is to say, with payment after six or nine months, or even for a longer time. He therefore gives the preference to such sellers as meet his wishes in this respect. The recent commercial crisis in Europe has had a very heavy and unfortunate influence upon Russian trade, and the lack of money and credit is much larger than ever. Consequently, many persons who otherwise would feel inclined to buy new machinery are letting things be as they are. The Russian, too, only goes in for new things if they are explained to him carefully. American exporters would be able to increase their trade considerably if they should open their own agencies in Russia and conduct direct correspondence with consumers. For an extension of trade in Russia and Siberia, where a large demand is to be satisfied, American manufacturers must meet the wishes of consumers."

The Mineral Industry: Its Statistics, Technology and Trade. Founded by the late Richard P. Rothwell and edited by Joseph Struthers, Ph. D. Publisher, the Engineering and Mining Journal, New York and London.

This is Volume X of the exceedingly valuable series started by Richard P. Rothwell, and dealing with a vast range of facts connected with the mineral industry of the United States and other lands. It has reached almost encyclopedic proportions, and yet is vastly superior to an encyclopedia in that it furnishes information in its special field embodying the latest statistics and other information. Dr. Struthers, the editor, has maintained the high character of the publication, which becomes more valuable every year. Its preparation requires an immense amount of labor and care to insure all possible accuracy in dealing with a great mass of details and to maintain the co-operation of scientists in all parts of the world, which is in itself a tribute to the authoritative character of the work. The present volume contains, in addition to special articles dealing with particular mineral products, a number of others treating of the progress of electro-chemistry and electro-metallurgy in 1901, mine-timbering and support of earth works, alloys as solutions, the literature of ore-dressing, liquefied carbonic-acid gas, and recent progress in the Wetherill system of magnetic concentration. Among the special contributors are Messrs. Philip Argall, John Birkinbine, William M. Brewer, Franklin R. Carpenter, James Douglas, Frank Drake, Edwin C. Eckel, Paul Dvorkovitz, F. J. Falding, August Heckscher, H. O. Hofman, W. H. Hammon, F. H. Oliphant, Otaker Hofmann, Walter Renton Ingalls, John B. C. Kershaw, Victor Lehner, Frederick H. Lewis, Parker C. McIlhenny, Henry A. Mather, John Alexander Matthews, C. Gustavus Memminger, Edmund H. Miller, David H. Newland, J. Obalski, Frederick Danvers Power, Joseph Hyde Pratt, Robert Hallowell Richard, Heinrich Ries, Ph. B., A. M., Ph. D.; Auguste J. Rossi, Wilbur E. Sanders, Albert Sauveur, Frederick Schiewind, Vincente Spirek, Joseph Struthers, Samuel Auchmuty Tucker, Titus Ulke, John R. Watson, Walter Harvey Weed, James S. C. Wells and H. A. J. Wilkens.

RAILROADS.

[A complete record of all new railroad building in the South will be found in the Construction Department.]

Building Up the Gould System.

"Holland," the New York correspondent of the Philadelphia Press, in reviewing the work of Geo. J. Gould in the development of the Gould system of railroads, including the extension to Baltimore and the great plans looking to the development of the Southwest, says:

"The increment which will be represented by the financing of the stock of the Gould systems into the control of the securities-holding corporation will be due in part, of course, to the general prosperity of the country. But it is said by business men here who have been familiar with Mr. Gould's directions as owner and as trustee of the Gould properties and of the Gould estate to be due also to constructive ability of a kind which William H. Vanderbilt did not care to reveal even if he possessed it. He sought simply to conserve. His father's saying that it was easier to make a fortune than to keep it seemed always to be in the mind of William H. Vanderbilt. But Mr. Gould has been one of those, many think the chief one, who has been engaged in opening up and developing that superb Southwestern region, which, in the opinion of some of the men of affairs, is to be the richest, the most productive of all the regions of the United States. In addition to that he has been slowly, with a caution, a patient attention to details, and, as the late Marcellus Hartley once said, with a foresight that matched that of Moltke, building a transcontinental system penetrating the States of the Ohio valley, touching the Great Lakes, entering Pittsburg and now approaching tidewater upon the Atlantic. Mr. Gould has doubtless felt that interests as vast as he has been instrumental in creating, transcontinental in their scope, not longitudinal like some of the railway systems or approximately paralleling degrees of latitude like the great trunk lines, but diagonal, stretching from the Rio Grande northeasterly and northwesterly, and then southeasterly to the Atlantic, inevitably involved a securer ownership than that identified by any one name. He had faith in the permanence of a great corporation, as well as in its ability to protect a corporation of the kind which he planned from such guerilla warfare as that of last spring, by which the Louisville & Nashville was captured. It would also make the battle waged by Mr. Harriman, with his German-American friends on the one hand, and Mr. Morgan and Mr. Hill, with their English-American friends on the other, impossible.

"The Gould estate, which passed into the possession of the trustees named by Jay Gould nearly eight years ago, was valued at about \$75,000,000. When the securities-holding corporation is created and the transfer of the Gould stocks to this corporation is made there will be obtained some hint of the increment due in part to the prosperity of the country and in part to Mr. Gould's management of these properties. The opinion of financiers here is that in this short time, less than a decade, Mr. Gould has duplicated the experience of William H. Vanderbilt, in that he has doubled the estate left by his father, so that the Gould properties are now worth to the Goulds individually and to the estate of which President Gould is one of the trustees, not far from \$150,000,000."

E. Dickinson for the Orient.

Advices from New York report that the Kansas City, Mexico & Orient Railway has secured for its general manager E.

Dickinson, now general manager of the Union Pacific Railroad, but who will go with the new line on January 1 next. Mr. Lewis Rendell, one of the English gentlemen interested in the K. C., M. & O., is credited with making this announcement upon their return from a trip over the line in the Southwest and in Mexico.

TRINITY & BRAZOS VALLEY.

A 300-Mile Railroad to Be Built Without a Bond Issue.

The charter for the proposed Trinity & Brazos Valley Railway has been filed at Houston, Texas. It is to build a line from a point in Johnson county through Hill, Limestone, Freestone, Leon, Madison, Houston, Walker, Trinity, San Jacinto, Montgomery, Harris, Polk, Liberty, Tyler, Hardin, Jefferson and Orange counties, also from Hillsboro, in Hill county, through Johnson, Bosque, Somervell and Hood counties to a point on the Brazos river, making a total length of line of about 300 miles. The headquarters of the company are to be at Hillsboro, and the capital stock is \$300,000. The officers are J. H. B. House of Houston, president; R. H. Baker of Austin, vice-president and general manager; E. Sammons of Austin, secretary and treasurer; James A. Parker of Boston, Mass., assistant treasurer; William Malone of San Marcos, superintendent of construction; E. M. House of Austin, chairman of the board. All except Mr. Parker are directors, and other members of the board are Stephen Young and S. R. Wrightington of Boston, and J. C. McDowell of Pittsburg.

It is stated that the road will be built without the issuing of any bonds. It will reach the Beaumont oil fields and the Gulf. It is understood that construction will start immediately from Cleburne southeast through Hillsboro, and thence to Mexia, on the Houston & Texas Central. Mr. J. C. McDowell, one of the incorporators, is general manager of the J. M. Guffey Petroleum Co. The Messrs. House are well-known bankers in Texas, and the other directors are active business men.

Oklahoma Central & St. Louis.

The Oklahoma Central & St. Louis Railroad Co. has been incorporated in Oklahoma with \$15,000,000 capital to build a line of an estimated length of 600 miles. It will run from El Reno, Okla., where it would connect with the Choctaw and the Rock Island, via Guthrie, Stillwater and Pawnee to Joplin, Mo., and thence to Jefferson City or St. Louis, crossing the Kansas City line of the Rock Island near Versailles, and opening up coal lands in Hickory, Camden, Miller and Morgan counties.

The charter was obtained by W. S. McCaul of Kansas City, who is quoted as saying that Philadelphia capital is backing the road, and that the United States Construction Co., chartered at the same time, will probably build it. Rights of way for 150 miles have been secured in Missouri. It is rumored that John W. Gates is interested.

Texas to Colorado.

The Weatherford, Mineral Wells & Northwestern Railroad of Texas, twenty-two miles long, from Weatherford to Mineral Wells, has finally passed into the hands of the Texas & Pacific, and new officers have been elected as follows: George J. Gould, president; L. S. Thorne, first vice-president; P. E. Bock, second vice-president; T. J. Freeman, general attorney, and J. W. Boot, secretary and treasurer.

Mr. Fouts will continue with the line as one of the directors. Mr. Bock, another board member, has been superin-

tendent of the road and Mr. Boot its secretary and treasurer for a long time. The line will, it is stated, be extended from Mineral Wells to Graham, and thence to Trinidad, Col., to connect with the Denver & Rio Grande Railway of the Gould system and make a short route to the Pacific coast.

Natchez & Gulf Railroad.

Another important railway projected in Mississippi is the Natchez & Gulf Railroad, which will be about 200 miles long, and will go through a fine timber belt. The line is to run via Adams, Franklin, Pike, Marion, Pearl River and Harrison counties. The officers are A. G. Campbell, president of the Natchez National Bank, president; J. W. Lambert, proprietor of the Natchez Democrat, vice-president; Col. W. W. Hungerford of Gulfport, formerly chief engineer of the Gulf & Ship Island Railroad, chief engineer and general manager; W. H. Shield of Natchez, secretary; S. H. Lowenburg, president of the Natchez Trust & Security Co., treasurer; S. H. Ratcliff, general attorney; directors, A. G. Campbell, J. W. Lambert, S. H. Lowenburg, E. H. Ratcliff, T. B. Postlewaithe, W. C. Magee, W. W. Hungerford, W. H. Shields and L. A. Benoist.

Royal Blue Book.

The leading article in the Book of the Royal Blue for October is a handsomely-illustrated description of the Rowland octoplex telegraph, so called because it can be used to send eight messages over one wire from each way simultaneously. The keyboard is like a typewriter, and the messages are automatically printed by a typewriting contrivance as they are received. The only work done by the operator is to press the keys; everything else is done by the instrument. The German government has purchased two complete sets of the machines. Other articles are: "Dreamin' When the Band Plays," by W. D. Nesbit; "West Point," by C. M. Staley; "Autumn Days at Atlantic City," by Dr. Thomas Calver, and "Washington Ninety-Eight Years Ago," a delightful picture of the national capital at the beginning of the nineteenth century.

Southern Railway's Prize.

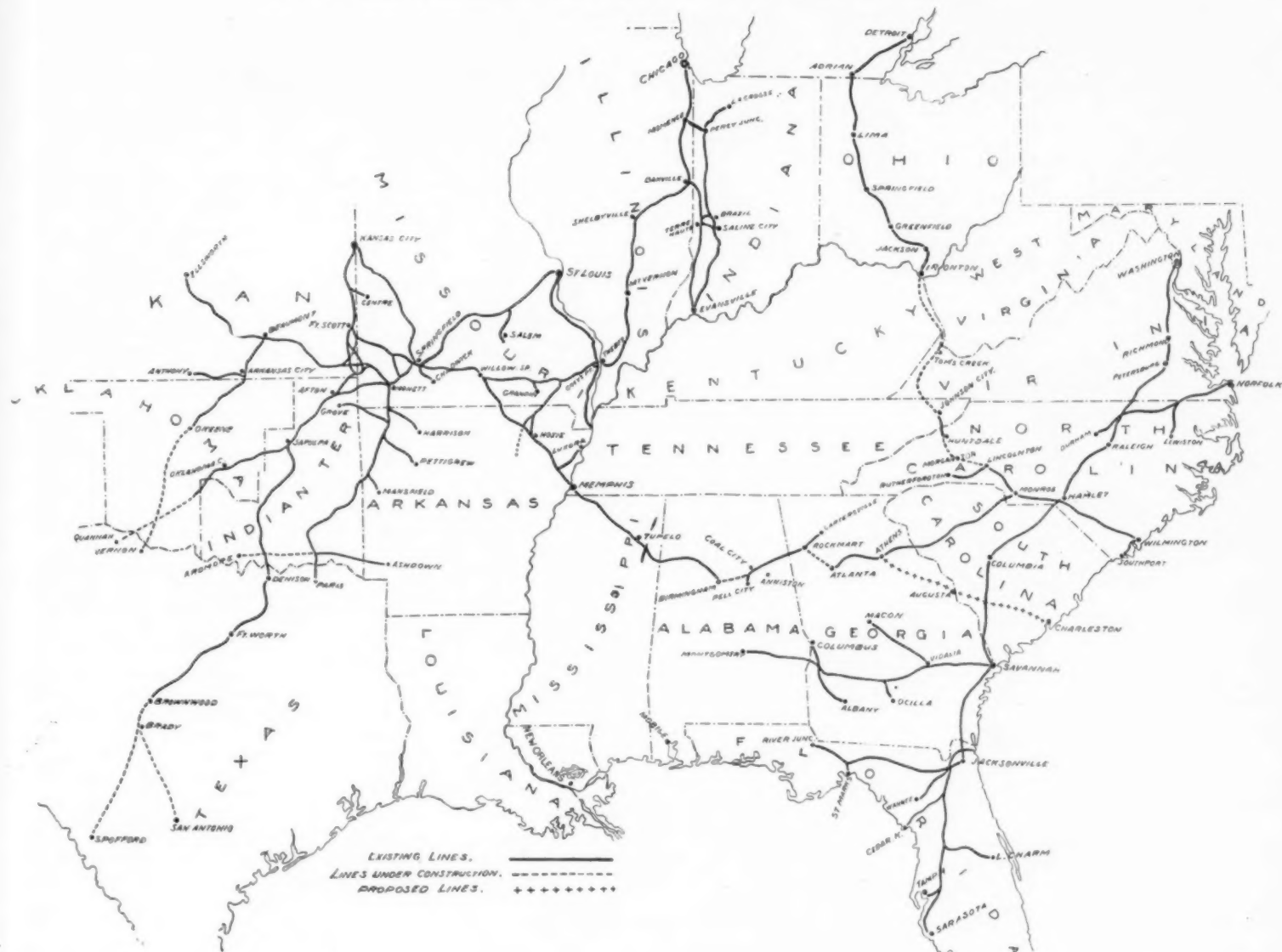
The Southern Railway Co. has been notified by the chairman of the committee on decorations for the recent national encampment of the Grand Army of the Republic that the committee appointed to award prizes for the three best decorated buildings in Washington has decided that the company is entitled to the first prize. The committee conveyed its congratulations on this success, and also thanks for the part the Southern Railway took in making the city attractive to the visitors. The handsome appearance presented by its general office building on Pennsylvania avenue was generally remarked, the decorations being wholly of numerous large new national flags, making an effect most dignified and pleasing.

'Frisco Magazine.

The 'Frisco System Magazine, issued by the passenger department of the St. Louis & San Francisco Railroad, contains a number of entertaining articles in its October number. One of these is "Riches of Crooked Creek," by W. M. Elliott, descriptive of a zinc, lead and fruit district. Another which is very timely is by J. C. McManima on the "Evolution of the Indian Territory." A third is about the "Management of a 50,000-Acre Ranch," by Wm. R. Draper, and a fourth concerns the extensive cultivation of peaches. The periodical is handsomely illustrated with excellent half-tones.

SEABOARD AND 'FRISCO.

Extent of Two Progressive Systems Which Have Recently Established Relations At Birmingham.



CONNECTED VIA BIRMINGHAM.

Seaboard and St. Louis & San Francisco Systems, Which Are Rapidly Extending.

The complete systems of the Seaboard Air Line Railway and the St. Louis & San Francisco Railroad, together with their respective acquired lines and projected extensions and connections, are shown in the accompanying map, giving a total extent of over 8000 miles. The two systems have recently established intimate relations at Birmingham, Ala., through an agreement for the joint use of the Birmingham Belt Line, and while no announcement has been made of any closer relations between the two great companies, it has been generally discussed in railroad circles that they would gradually form closer ties for an interchange of through passenger and freight business.

It will be observed that the map shows the line now building to connect the Seaboard via Lincolnton and Morgantown, N. C., with the Tom's Creek coal mines, besides the line through the Breaks of the Big Sandy into Eastern Kentucky and thence to Ironton, Ohio, to reach the Detroit Southern Railroad, that is also shown. The small link of completed line between Johnson City, Tenn., and Hunt-dale, N. C., is part of the old Three Cs road, which is thus made available for the Seaboard to obtain an independent supply of coal over its own line. This through route would afford the Seaboard a direct coal road to the coast via its own line to

Wilmington, and, in connection with the proposed Cape Fear Terminal Railway, to Southport.

The East & West Railroad of Alabama, which will take the Seaboard into the Birmingham district, is also outlined, together with the extensions that are to connect it with Atlanta on the east and Birmingham on the west. The Macon, Dublin & Savannah road, an important connection of the Seaboard's, is likewise shown, as well as the projected line from Athens, Ga., via Augusta to Charleston, S. C.

On the western side of the map the proposed extensions of the St. Louis & San Francisco system are shown as far as announced, as well as the Chicago & Eastern Illinois Railroad, recently bought by the 'Frisco, extending from Chicago southward to Evansville, Ind., on one division and to Thebes, Ill., on the other, at which latter point connection is to be made from Gray's Point, Mo., with the St. Louis & San Francisco system via the St. Louis, Memphis & Southeastern Railroad, which is shown along the Mississippi river. A connection from St. Louis direct to Chicago is also expected.

It will be noted that when the connections are made between the Seaboard and the Detroit Southern and between the 'Frisco and the Chicago & Eastern Illinois it would be possible, by building a link of 150 miles from La Crosse, Ind., to Adrian, Mich., to connect at the north the two systems, which now meet only at Birmingham, at the south. Furthermore,

the map shows the necessity for a direct connection between the 'Frisco's lines in Texas and its Birmingham line at Memphis, Tenn. This, it has been rumored, might be accomplished by building the proposed Memphis, Arkansas & Texas Railroad from Memphis to a connection with the 'Frisco in the southwestern part of Arkansas. It is also declared that the 'Frisco will sooner or later have its own line to New Orleans or to some other port on the Gulf. In this connection it must be noted that from time to time reports were circulated that the Mobile, Jackson & Kansas City Railroad, now building northward through the eastern part of Mississippi, would give the 'Frisco its desired outlet to tidewater on the south.

Furthermore, the map displays the need for a connection from Birmingham via Montgomery, Ala., to River Junction, Fla., by which the Seaboard system would be made more nearly complete.

The length of line, either completed or building, shown by the map is 8041 miles, composed as follows: Seaboard Air Line, 2600 miles; East & West Railroad, recently purchased by the Seaboard, and extensions, 200 miles; St. Louis & San Francisco system, 3430 miles; Chicago & Eastern Illinois Railroad, recently purchased by the 'Frisco, 1040 miles; St. Louis, Memphis & Southeastern, 267 miles; Detroit Southern, 374 miles, and the Ohio River & Charleston, from Lincolnton to Tom's Creek, 130 miles. The line to Ironton, Ohio, if built, would be

about 140 miles long. The line projected from Athens, Ga., via Augusta to Charleston is 210 miles long.

The rapid growth of the 'Frisco system has been one of the wonders of the railroad world. About a year ago it had only 1703 miles of track, but it has since acquired the Kansas City, Memphis & Birmingham and the Kansas City, Fort Scott & Memphis, besides the Fort Worth & Rio Grande, the Red River, Texas & Southern and the Birmingham Belt, in addition to making a number of extensions, which swell its mileage to the present total of 3430. It is still building at a rapid rate in the Southwest, and when the Chicago & Eastern Illinois is taken into the system it will have at least 4500 miles of track. The capital stock of the company is \$48,385,104, and the bonded debt \$122,693,455. The gross earnings per mile for the last fiscal year were \$6648, and the net earnings \$2505. The gross earnings for the year were \$21,620,882, an increase of very nearly \$3,000,000 over the preceding year, and the net earnings show a gain of nearly a quarter of a million; they would have been larger but for the fact that the company has made liberal expenditures upon the property out of the current revenues, thus strengthening it for the future.

Concerning the skillful executive of the 'Frisco, the New York Times says: "President B. F. Yoakum's development and management of the St. Louis & San Francisco system already give him distinctive position in the American railway

world; but apparently he is only at the threshold of larger successes; the expanding Southwestern property is preparing to become a very much more important figure on the country's railway map."

A Study of Earnings.

In the reports of railway earnings for August the roads in the South show considerably greater gains than those in any other section of the country. In gross earnings the increase of Southern lines, as compared with August of last year, was 8.6 per cent. The trunk lines came next, with an increase of 6.3 per cent., the roads of the Central West with 6 per cent., and the Southwestern lines with 3.6 per cent. The Pacific roads and the strangers display gains of even less proportion. The loss of the hard-coal roads is about 25 per cent.

Referring to these returns Bradstreet's remarks that the hard-coal lines show in net earnings a decrease of 63.4 per cent. It also says that for the month, railways so far reporting, the principal anthracite coal roads included, show gross earnings aggregating \$96,032,178, a sum that is but 2.3 per cent. in excess of the total for the like month last year. Net earnings, on the other hand, decreased 7 per cent. on a total of \$32,509,371. Of course, such results were not unexpected, in view of the almost complete cessation of industry in the Pennsylvania hard-coal fields, the strike of bituminous coal miners in West Virginia, the limited movement of all cereals save wheat, and the fact that there was one less working day in August the current year than in the like period one year ago, there having been five Sundays in August, 1902, as against four in the same month last year. Finally, it should be noted that the cost of operation was heavily augmented as the result of higher wages, combined with heavy expenditures for betterments, which the roads seem disposed to make while prosperity continues. In corroboration of this point we may cite the returns of that typical American road, the Pennsylvania, which, while it shows an increase of \$892,400 in gross earnings on its lines east of Pittsburg, succeeded in saving only \$59,000 for the net. Again, while gross earnings on the Western branch of the system increased \$382,700, the net earnings actually declined \$87,500.

The gross earnings of the Southern roads for August were \$14,308,959, increase \$1,141,251; their net earnings were \$4,135,479, decrease \$44,022. The Southwestern roads earned gross \$10,353,575, increase \$365,464; net \$3,736,035, decrease \$95,638. As a whole, considering the heavy expenditures for betterments, the reports are gratifying.

Denver, Northwestern & Pacific.

The Mercantile Trust Co. of New York, the Providence Banking Co. of Providence, R. I.; the Commercial Trust Co. of Philadelphia and the International Trust Co. of Denver are receiving for the Colorado-Utah Construction Co. applications for subscriptions of \$1000, and multiples thereof, to the bonds and stocks of the Denver, Northwestern & Pacific Railway Co. The subscription books will be open until the close of business November 16, after which no further applications will be received.

The railway company has an authorized capital of \$20,000,000, of which one-half is 5 per cent. non-cumulative preferred and the other half common stock. The first mortgage, which is to the Mercantile Trust Co. of New York, provides for an issue not exceeding \$22,500,000 of 50-year 4 per cent. gold bonds, of which the balance of \$2,500,000 remaining after the payments to be made under the construc-

tion contract will be held in reserve by the railway company.

The construction company is to build and equip about 500 miles of the railroad from Denver, Col., and Salt Lake City, Utah. The contract provides for a substantial roadbed, 80-pound steel rails and modern passenger and freight equipment, and the railway company will issue to the construction company \$40,000 of first mortgage bonds and \$20,000 par value each of full-paid preferred and common stock for each completed and equipped mile of main track.

The right is reserved to call for the payment of subscriptions as money is needed by the construction company, but in no case, it is stated, will subscribers be required to pay more than 10 per cent. of their subscriptions in one month.

East Coast to Issue Bonds.

A dispatch from Jacksonville announces that the Florida East Coast Railway Co. has filed a mortgage to secure an issue of 5 per cent. 30-year bonds amounting to \$8,741,000. These are the first bonds issued on the property, and it is reported that the Southern Railway is interested in the movement. The company has 515 miles of track on its main line and branches, the former extending from Jacksonville to Miami, Fla., 366 miles. The property is owned by H. M. Flagler and associates.

Through the Ocoee Valley.

It is reported from Knoxville that the Ocoee River Railroad Co. has been incorporated to build a short cut for the Atlanta, Knoxville & Northern road through the Ocoee river gorge from Wetmore to Copper Hill, a distance of about eighteen miles, in Polk county. This would, it is stated, shorten the line twenty-two miles and make a better route for the running of trains between Cincinnati and Atlanta over the Louisville & Nashville, the Knoxville, La Follette & Jellico and the A., K. & N. roads.

Acquired by the Wabash.

The Marietta, Columbus & Cleveland Railroad, recently purchased by the Wabash, has been finally transferred, and D. H. Roberts of Parkersburg, W. Va., has been elected president. J. T. Blair of the same city is secretary and treasurer. Mr. Blair is also president of the Little Kanawha Railroad, a Wabash line, and the Ohio road just acquired will be used as part of the route to connect the Wabash with the West Virginia Central.

Ellis Succeeds Newton.

It is reported from Louisville, Ky., that Mr. J. H. Ellis, secretary of the Louisville & Nashville Railroad, has been elected president of the Knoxville, La Follette & Jellico Railroad, and vice-president and general manager of the Atlanta, Knoxville & Northern Railroad, to succeed Mr. John B. Newton, who has resigned both positions to accept an important position elsewhere. The change is effective November 1.

A Texas Electric Project.

Dispatches from several Texas points report that H. F. Farnham, who is said to represent the "Union Traction Co. of Cleveland, Ohio," has been conferring with W. E. Greiner, president of the Sherman Board of Trade, and other business men elsewhere with the view to building an electric railway from Sherman to Dallas, Waxahatchie, Waco and Austin, a distance of about 250 miles.

Morgantown Electric Railway.

Mr. George H. Switzer, superintendent of construction of the Morgantown Elec-

tric & Traction Co. of West Virginia, writes to the Manufacturers' Record under date of October 17, saying:

"This company is about to build four miles of electric railroad, also a new power-house for the same, and remodel the lighting system. The contract for the machinery for the plant will be let next week."

Atlanta to Tallulah Falls.

Messrs. G. F. & F. M. Scofield, bankers, of Atlanta, Ga., write to the Manufacturers' Record confirming the report that they have secured franchises for an electric railroad from that city to Tallulah Falls, about 100 miles, and expect to handle freight and passengers. The firm says that the work will be pushed as rapidly as possible.

Railroad Notes.

It is reported from Macon, Mo., that 300 Japanese laborers are employed in building the Iowa & St. Louis Railroad north of Elmer, in Macon county.

A report from New York says that the rumored great security-holding company to control the Gould lines is to be incorporated about the first of next year.

The Louisville & Western Railway Co., which is a reorganization of the Columbus, Sandusky & Hocking Railway, has been incorporated in Ohio, and the north end of the old system will be operated in connection with the Norfolk & Western Railway, giving it an outlet to the Lakes.

Regarding the numerous reports that the Gulf & Interstate Railway will be reconstructed, Mr. Joseph P. O'Donnell writes the Manufacturers' Record that he is unable to say when it will be done, but he expresses the opinion that the reorganizers will soon take possession and rebuild.

Norfolk & Western Industries.

The annual report of the Norfolk & Western Railway Co. for the year ended June 30 shows that the following industries were established on the line of the road during the year:

Two furniture factories, one cottonseed-oil manufactory, four ice plants, twenty-two saw-mills, four tobacco factories, one silk mill, two peanut factories, one wood-working plant, two tanneries, four brick plants, two foundries, one planing mill, seven flour mills, one steam cracker bakery, one paint factory, four stave and heading mills, one bark mill, one locust-pin mill, one knitting mill, one canning factory, one spoke factory, one manufactory of builders' supplies, one iron mine, one barytes mill, twelve coal mines, one steel works, two rim and spoke works, one cement works, one sheet mill, one chair-stock factory, one shoe-heel factory, one tobacco storage plant, one kaolin plant, one shuttle-block factory, one corn mill, two coal and wood yards.

At the close of the year there were seventy-nine coal and coke companies in operation on the line of road, 7610 coke ovens were completed and 871 under construction, exclusive of those contracted for by the United States Coal & Coke Co. In addition to these there are eight operations in the Thacker and Tag River districts about ready for work.

There were in operation on the line of the road fourteen iron coke furnaces, with an estimated aggregate capacity of 1695 tons of pig-iron per day. Seven furnaces, aggregating seventy-seven tons of pig-iron per day, were out of blast at that date.

Under the auspices of the Consolidated Lake Superior Co. the hydraulic power plant of the Michigan-Lake Superior Power Co. at Sault Ste. Marie, Mich., will be opened on October 25.

MINING.

An Old Miner's Prospecting.

In a letter to the Manufacturers' Record Mr. J. R. Hogue, P. O. Box 205, Eufaula, Ala., says that he was a miner in California in 1849, in Mexico and Colorado and in the Black Hills, and that he has had an experience in practice and theory in geology, being now seventy-eight years old. He says that he has found in different parts of Eastern Alabama needle and hematite iron ore in quantities sufficient to run a furnace for twenty years, graphite, white, drab and yellow kaolin, three grades of yellow ochre, iron pyrites, fire-clay, molding clay, two grades of glass sand and coal. He thinks that the last named has too much sulphur and iron in it to burn well, but he believes that if it is run back farther it will be all right. He mentions also as being in the neighborhood mineral springs, a vegetable fertilizer something like Irish peat in character, some petroleum, etc. He says that he has discovered in another part of the county a vein of silver and lead. He adds that he has made efforts to option the properties where these deposits are, but that he has been limited by lack of capital in his desire to develop them. He says that while these deposits are in a country rough for transportation in wagons, there is a railroad project which, according to its survey, is to pass from within half a mile to one mile of the minerals.

Clear Creek Coal Co.

The Clear Creek Coal Co., incorporated with \$500,000 capital stock and the privilege of increasing to \$1,000,000, owns and will develop from 5000 to 7000 acres of fine coal land near Isoline, Tenn. Its output will be about 1000 tons daily. At this time 600 tons are being produced. H. Crawford Black is president; Hon. Lloyd Lowndes of Cumberland, Md., vice-president, and Mr. Van Lear Black, secretary-treasurer. These gentlemen, together with Mr. W. H. Dawson of Baltimore and Mr. E. Watkins of Chattanooga, constitute the board of directors.

Mr. H. Crawford Black is perhaps better known from his connection with the Black-Sheridan-Wilson Company, Baltimore, extensive dealer in George's Creek coal.

Virginia Coal Mine.

H. L. Lorraine and Mr. F. C. Christian, both of Richmond, Va., representing themselves and others, bought in the Gayton mines, near Gayton, Va., a few days ago at auction for \$105,000. This property has not been worked for over a year, but is considered very valuable. It comprises over 3000 acres of fine semi-anthracite and steam coal, and will employ from 1500 to 2000 men. It is said that operations will begin at once, since the machinery is at hand, much already in place. Mr. Lorraine is senior member of the Lorraine Coal Co., with offices at Broad and Laurel streets, Richmond, Va.

For a Louisiana Survey.

Mr. Charles M. Dobson of Lake Charles, La., is making strenuous efforts through local papers to bring into developmental publicity the natural resources of the State. He has recently made, through the Daily American of Lake Charles, a strong plea for the sulphur in Calcasieu parish, and has urged legislative appropriation for an extended and commercially succinct geological survey.

Kelly & Irvine of Big Stone Gap, Va., have purchased a tract of coal land near Norton, Va., are now at work on

openings, grades and house for the development of the same.

Mining Notes.

W. P. Robertson Developing Co., South Carrollton, Ky., in sinking a shaft struck a nine-foot vein of coal about ninety feet down. There are 4000 acres of this land.

Messrs. Stephen & George Noble of Anniston, Ala., have purchased for \$5000 the farm of Mr. Warren Green, containing thirteen acres, situated two miles west of Cedartown, Ga., which they will develop for the rich iron it is said to contain.

Leewood Colliery Co., capital stock \$100,000, will operate property at Leewood, W. Va. William Brown, P. H. Howell, John Faulkner of Mt. Carbon, W. Va., and Frang Fox and W. L. Black of Charleston, W. Va., are the incorporators.

The Marion Mineral Co., Marion, Ky., is developing zinc, lead and fluor-spar properties in Crittenden county, Kentucky, and Hardin county, Illinois. About seventeen tons of ore is being taken out daily. For the present no machinery will be installed.

S. N. Leonard, Eddyville, Ky., recently sunk two shafts on property, 2000 acres of which he owns, looking for lead and zinc. At sixty-five feet he took out some ore which has been analyzed, showing 9.2 per cent. copper and 3.5 per cent. zinc. The owner has not yet decided upon developments.

The Middle States Coal Co., Columbus, Ohio, Harry Olmsted, president; Thos. D. Huntington, treasurer; F. G. Hatton, secretary, and George Martin of Welsh, W. Va., general superintendent, capital stock from \$300,000 to \$500,000, will develop coal land at Huger, W. Va. Contracts for machinery have not yet been awarded.

W. J. Willits of Three Rivers, Mich., and L. O. Pettet of Big Stone Gap, Va., have bought in the property owned by the Norton Coal Co., Norton, Va. The purchasing parties are reported as having placed contracts already for 100 coke ovens, and have in contemplation 200 more. The output of the old company will be largely increased.

A charter has been granted at Nashville, Tenn., to the Dixon Mining, Improvement & Development Co., De Kalb county, Tennessee, capital stock \$110,000. The incorporators are Thomas J. Dixon, Charles H. Jackson, B. M. Webb, Frank B. Giles and David H. Milner. The company will mine coal, copper, lead, zinc and other minerals.

A company is reported as forming at Parkersburg, W. Va., with \$1,000,000 capital stock, for the development of the iron fields of the Potts Creek valley, in Virginia. Another company will form to build a branch from the Chesapeake & Ohio near Covington to the workings. Messrs. J. E. MacCorkle and J. N. Camden, both of Charleston, W. Va., will look after the preliminary organization.

At the suggestion of the Asheville Board of Trade, the Chambers of Commerce of Knoxville and Raleigh, the directors of the Appalachian Park Association and others, a convention will be held at Asheville, N. C., on October 25 for the purpose of concentrating efforts for the passage by the House of Representatives of the Senate bill in the interest of the proposed Appalachian National Forest Reserve.

Josef Schvarecz & Co. of Budapest, Hungary, writes to the Manufacturers' Record that he desires to have quotations from American manufacturers of blades for reaping machines.

TEXTILES.

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the Manufacturers' Record. We shall be glad to have such matter at all times, and also to have any general discussion relating to cotton matters.

Merrimack Company's Plans.

A lengthy reference was made last week to the Merrimack Manufacturing Co. of Lowell, Mass., as having voted an increase of \$1,650,000 in capitalization for the purpose of extending its operations at Huntsville, Ala. It was mentioned that the Huntsville branch was originally planned for 50,000 spindles and 1500 looms, but that only half of that equipment was installed. It is now stated at Huntsville, although not known to be authoritatively, that the company will at once prepare to build a plant to contain 75,000 spindles and about 2400 looms. This new plant's product will be, as at present, standard print cloths (sixty-four inches square) exclusively, to be shipped to the company at Lowell for bleaching and converting into standard prints.

Margolius Cotton Mills.

A charter has been granted the Margolius Cotton Mills Co. at Portsmouth, Va., its capital stock being placed at \$50,000, with privilege of increase to \$100,000, and the following officers: President, R. Margolius; vice-president, J. Hirsch; secretary-treasurer, I. Margolius, and general manager, D. Margolius. These officers and H. Margolius are the directors. The company will own and operate the jute bagging plant announced some weeks ago as to be built by Messrs. Margolius & Co., and now about completed. There are two buildings 100x170 feet each, and a portion of the machinery comes from a plant formerly operated by Margolius & Co. at Charlotte, N. C.

Rug Mill at Petersburg, Va.

It was stated several weeks ago that Thomas Hirst of the Hirst Smyrna Manufacturing Co. of Vineland, N. J., had about decided to establish a branch rug mill at Petersburg, Va. All details for establishing the plant have since been completed, and a suitable building has been secured. From 50 to 100 looms will be installed, and as rapidly as local operatives are secured and become proficient in using the looms additional machines will be installed. The plant will be operated at the Vineland Rug Co.; Joseph C. Hirst, manager.

A \$10,000 Knitting Mill.

Thomas J. Lillard of Elkin, N. C., was mentioned recently as contemplating the establishment of a cotton or knitting mill. He has decided upon a knitting plant, and incorporated the Elkin Knitting Mills to build and equip the mill. Capital stock is \$10,000, and twenty knitting machines, with complement of sewing machines, etc., will be installed for the production of men's, women's and children's hosiery. Further details are now under consideration. Mr. Lillard has been chosen president.

To Make Hosiery.

Charter of incorporation has been granted the Black Rock Knitting Co. of Hagerstown, Md., with a capital stock of \$10,000. The company has completed a plant, under construction for several months, with 100 knitting machines for

the production of misses' and boys' hosiery. Daily capacity will be 250 dozen pairs. S. A. Suter is president; Walter M. Smith, vice-president; W. O. McCutcheon, superintendent, and S. H. Weiheymayer, secretary-treasurer.

The Cotton Movement.

In his report for October 17 Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, shows that the amount of cotton brought into sight during the forty-seven days of the present season was 2,303,034 bales, an increase over the same period last year of 549,758 bales; exports were 1,071,505 bales, an increase of 322,112 bales; takings by Northern spinners 248,321 bales, an increase of 44,959 bales; by Southern spinners 299,308 bales, an increase of 30,772 bales.

Textile Notes.

The Wahnetta Mills of Cedartown, Ga., will install machinery for producing a new class of goods—children's union suits.

York Cotton Mills of Yorkville, S. C., has awarded contract for erection of a brick addition 57x80 feet in size. This addition will be used as a cone-winding room. The company operates 13,264 spindles and 7000 twister spindles.

A movement is on foot for the erection of a cotton factory at McCormick, S. C. B. F. Mauldin, president of the McCormick Bank, is interested in the proposed enterprise, and will endeavor to organize a company for its establishment.

It is reported that Henry Spang of the Ely Walker Dry Goods Co., St. Louis, Mo., is seeking site in the South for the establishment of a large hosiery mill. A plant of such size as will employ from 200 to 300 operatives is said to be contemplated.

A. M. Hatcher of Houston, Texas, represents capitalists who have submitted a proposition for the establishment of a \$100,000 cotton factory at Orange, Texas. The projectors ask that Orange investors subscribe a certain amount of the requisite capital and furnish free site for the plant.

The Josephine Mills of Cedartown, Ga., has decided to add considerable new machinery to its plant. These improvements will increase the plant's output to 750 garments per day. The company at present operates 2080 cotton spindles, twenty-three knitting machines, etc., and is capitalized at \$100,000.

T. T. Ballenger of Tryon, N. C., was mentioned recently as proposing the formation of a knitting company. He has succeeded in organizing with A. D. Beaton, president; T. T. Ballenger, vice-president, and F. P. Bacon, secretary-treasurer. Investigations are now being made with a view to deciding upon further and final details.

Stonewall (Miss.) Cotton Mills is proceeding with the repairs to its No. 1 plant, recently damaged by fire. About \$50,000 worth of new machinery has been ordered from New England makers to replace equipment that was made useless. Additional fire protection will also be installed, including a 50,000-gallon steel tank. The company operates a total of 21,000 spindles and 500 looms.

Messrs. J. Walter Williamson, Edwin C. Holt and Clayton Giles, Jr., of Wilmington, N. C., have incorporated the Sterling Manufacturing Co., with capital stock of \$50,000. Company's purposes are stated as the manufacture of cotton, linen and silk fabrics, the finishing of same, etc. Those named are prominent cotton-mill operators. No specific statement as to intentions of the company has been made.

The Gulf Bag Co. of New Orleans, La., and other cities has purchased a ware-

house at the foot of Poplar street, Memphis, Tenn., and will equip it with machinery for manufacturing bags of burlap and other cloth. From fifty to seventy-five hands will be employed at the start. This company is controlled by the Bemis Brothers Bag Co. of St. Louis, Boston, New York and other cities, and this latter company owns the Jackson Fiber Co., capitalized at \$400,000 and manufacturing bag cloths at Jackson, Tenn. In manufacturing bags at Memphis it is stated the company will use material imported from Calcutta, India.

QUOTATIONS OF COTTON YARNS.

By Buckingham, Paulson & Co., New York, Philadelphia and Chicago.

October 21.

No. 10s-1 and 12s-1 warps.....	14 @14½
No. 14s-1 warps.....	15 @
No. 16s-1 warps.....	15½ @
No. 20s-1 warps.....	15½ @16
No. 22s-1 warps.....	16 @
No. 26s-1 warps.....	16½ @
No. 6s to 10s bunch yarn.....	13½ @14
No. 12s-1.....	14½ @
No. 14s-1.....	14½ @15
No. 16s-1.....	15 @
No. 20s-1.....	15½ @16
No. 22s-1.....	16½ @17
No. 26s-1.....	17 @
No. 8s-2 ply soft yarn.....	14½ @14½
No. 8s-2 ply hard.....	15 @
No. 10s-2 ply hard.....	14½ @
No. 12s-2 ply hard.....	15 @
No. 14s-2 ply.....	15 @
No. 16s-2 ply.....	15½ @
No. 20s-2 ply.....	16 @
No. 24s-2 ply.....	17 @17½
No. 36s-2 ply.....	17½ @
No. 30s-2 ply yarn.....	18½ @
No. 40s-2 ply.....	24 @
No. 8s-3, 4 and 5 ply.....	14 @
No. 20s-2 ply chain warps.....	16½ @
No. 24s-2 ply chain warps.....	17½ @
No. 26s-2 ply chain warps.....	18 @
No. 36s-2 ply chain warps.....	19 @19½
No. 16s-3 ply hard twist.....	15½ @
No. 20s-3 ply hard twist.....	16 @
No. 26s-3 ply hard twist.....	17½ @

Market very firm and active.

Cottonseed-Oil Notes.

Receipts of cottonseed at Gonzales, Texas, last week were unusually heavy, the price being steady at \$16.50 per ton.

The steamship Salopia, loading last week at Pensacola for a European port, took as part cargo 1800 tons of cottonseed meal.

The Rosebud Oil & Cotton Co. of Rosebud, Texas, filed an amendment to its charter last week, increasing its capital stock from \$75,000 to \$100,000.

The Southern Cotton Oil Co. has nearly completed its new oil-mill plant at Florence, S. C. The mill will be put in operation this week. This plant is said to be one of the finest in the State.

Cottonseed products at Dallas, Texas, last week were quiet and unchanged. Prompt prime crude oil was quoted 27½ cents, with few sales. There were several sales of meal and cake at \$20.50 for prompt shipment; linters, 2¼ to 2½ cents, according to quality; seed was irregular at \$16 to \$17 f. o. b. cars; prime summer yellow oil, 31 cents.

The Transatlantic Trading Co. of Galveston, Texas, reports the shipments of cottonseed products from that port for the month of September as follows: Cottonseed meal 5495 tons and cottonseed cake 495 tons, or a total of 5990 tons. The same company reports the shipments from New Orleans for September at 1225 tons of meal and 2420 tons of cake, or a total of 3695 tons.

The following are the official quotations of cottonseed and cottonseed products as posted at the New Orleans Cotton Exchange on the 20th inst.: Prime refined oil in barrels, per gallon, 36 cents; off refined oil in barrels, per gallon, 35 cents; prime crude oil, loose, per gallon, 30½ cents; prime cottonseed cake, per ton of 2240 pounds, \$26.50 to \$26.75; prime cottonseed meal, per ton of 2240 pounds, \$25.50 to \$25.75; soap stock, per pound, 1.10 cents; cottonseed in sacks delivered at New Orleans, per ton of 2000 pounds, \$17; in bulk delivered at New Orleans, per ton of 2000 pounds, \$16.

MECHANICAL.**The Rand Drill in Use.**

Truly has it been said that the New York rapid-transit tunnel is the most

This work was promised in four and one-half years. How is it possible to fulfill this promise? The answer may be given in two words, the same answer that was given to the problem of constructing the Chicago Sanitary and Ship

Rand drills, operated by compressed air (already applied with satisfactory results to riveting on bridge construction and other work), make possible this undertaking. It would take 100 years to hollow this tunnel out with hand drills.

steel tanks until the pressure reaches 200 pounds. From the storage tanks iron pipes lead the air to the drilling points. By means of small rubber hose the air is led from the distributing pipes to the drills. The drills are mounted on three legs. In reality, these machines are small vertical engines, the lower end of the piston-rod having a clamp into which the drill-rod is fastened. When air is admitted the drill darts back and forth with great rapidity, and at each blow the drill point is slightly turned. These points are chisel-shaped. The operator turns a wheel from time to time, lowering the drill further into the hole as it eats out the rock. Compressed air exhausts from the machine at each stroke. When the hole is deep enough the drills are withdrawn and moved to the rear, a firing crew advances, fills the holes with dynamite or other explosives, fires the blast and again make way for the drills. The work goes on.

In constructing this tunnel will be used 65,000 tons of steel, 8000 tons of cast-iron, 551,000 cubic yards of concrete and 910,000 square yards of waterproofing. Beneath the more congested districts four tracks will be laid.

At 169th and at 181st streets stations will be hollowed from the solid rock at a depth of 110 feet. These stations will be provided with elevators to take passengers from the streets to the underground cars. This is the most comprehensive system of rapid transit ever devised.

Rand drills are made by the Rand Drill Co. of New York city, 128 Broadway.

Machine-Tool Builders.

The National Machine Tool Builders' Association held its annual convention at the Hollenden Hotel, Cleveland, Ohio, October 14 and 15.

The meeting was well attended, thirty or more manufacturers of machine tools being represented.

This association, which was organized in New York on May 14, 1902, has for

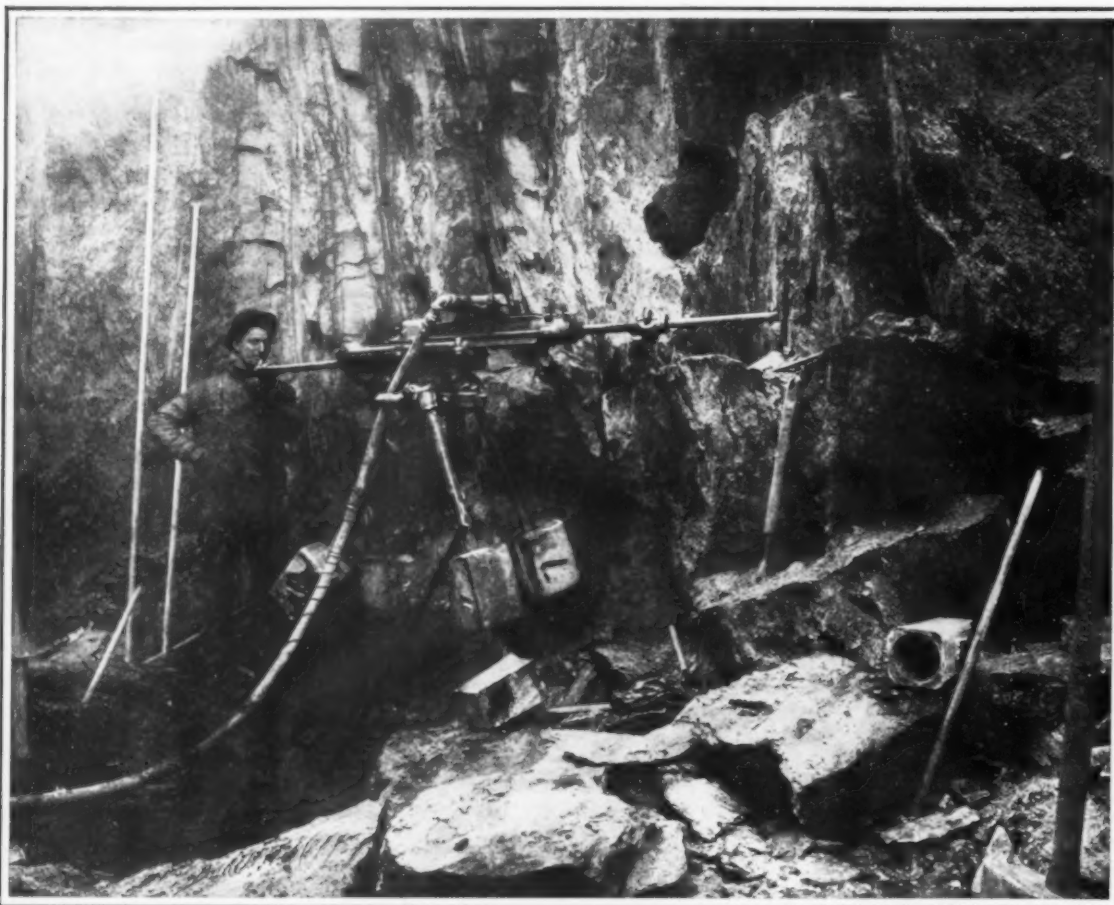


FIG. 1—THE RAND DRILL.

stupendous engineering feat in history; truly has it been said that the promised completion of such an undertaking in so short a time as four and one-half years is little short of marvelous.

One million three hundred and twelve thousand cubic yards of solid rock, 3,200,000 cubic yards of material in all, will be hollowed out of its path, fifty-eight miles in length, under the heart of New York city.

The difficulties which beset such an undertaking as the boring of this great hole can hardly be conceived. This tunnel goes under, over and through a labyrinth of conduits, tunnels, wires, beams, vaults, sewers, pipes and irons of every sort and description; it bores under the foundations of the greatest and tallest buildings of New York. Sky-scrapers line its route. The original layers of rock through which this subway goes have been disturbed and distorted until many are much inclined; in fact, the layers are more often vertical than horizontal. Sometimes in a small space layers are doubled on themselves. Seldom is it possible to break out the rock in pieces anywhere approaching uniformity in size.

Seams occur, filled with soft rock, serpentine and talc; these, when unsuspected, cause dangerous slips, threatening undermining for the houses above.

The contract for this work is said to be the largest single contract ever let. To John B. McDonald it went for \$35,000,000. An army of 10,000 men hammer unceasingly into the rock ahead; hour after hour, day after day, night after night and week after week the work goes on; the drills bore deeper, the blasts shake the structures further and further along the way; day by day the tunnel's end moves forward.

canal, which, like this, was bored, for the most part, through solid rock—this answer is, Rand drills. This is literally true.

The operation of these drills is simple. At intervals have been established compressing plants. Here by means of powerful engines, air is forced into strong

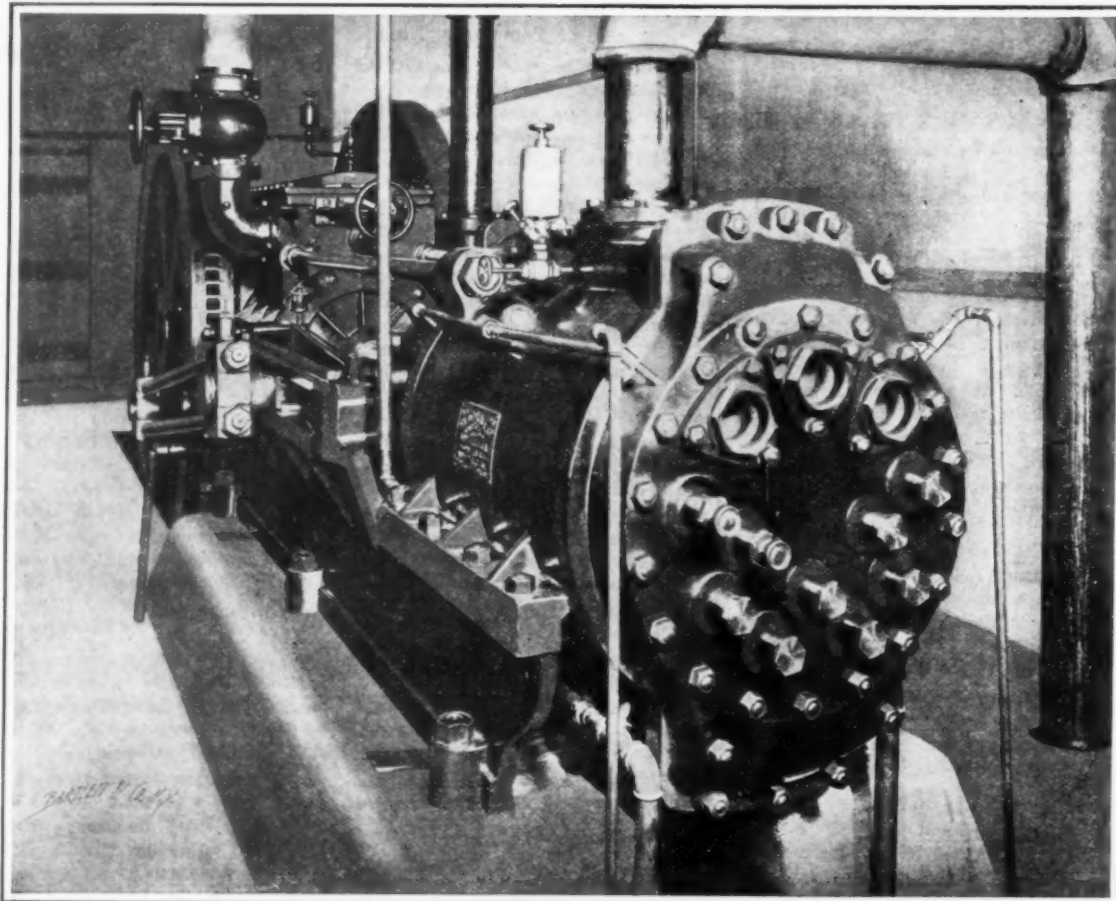


FIG. 2—RAND COMPRESSED-AIR PLANT FOR THE OPERATION OF DRILLS.

its object the promotion of the interests of the machine-tool builders in the direction of good fellowship and the liberal discussion of subjects pertaining to the manufacture and sale of machine tools.

At the session held on the 14th a paper on the metric system was read by Mr. F. A. Halsey, associate editor of the American Machinist. The following-named officers were elected: Joseph Flather, Nashua, N. H., president; Wm. Lodge, Cincinnati, Ohio, first vice-president; W. P. Davis, Rochester, N. Y., second vice-president; P. E. Montanus, Springfield, Ohio, secretary, and Enoch Earle, Worcester, Mass., treasurer.

The Bonar Steam Trap.

James Bonar & Co., Carnegie Building, Pittsburg, make a steam trap. This trap is illustrated here. In principle and

charge pipe, trunnion and valve, where it escapes to the discharge connection in the bottom of the valve case.

When the water is blown out of the cylinder, the short end, being the heavier, naturally returns to its former horizontal position, the same action going on as before.

The cylinder itself is arranged on the first principle of leverage, having the weight at the one end, the power at the other end and the fulcrum between them. At the same time when the cylinder starts to tilt the second principle of leverage is formed, with the weight (the valve) between the power and the fulcrum.

The valve being movable, it is necessary to encase it. The valve is accessible by simply removing the cap, even while the pressure is on the trap, and then the

inder begins to tilt enables the manufacturers to do this.

The trap is arranged to use several types of valves, but the ball valve has been found most satisfactory. The valve is simply an opening, with a ball lying on top, kept tight by the pressure behind it. It is independent, and not subject to

combination is effected it is only necessary to feed about one-third as much oil as when no graphite is used.

Another valuable feature of graphite is that it fills up the crevices and interstices of the packings; thus the stuffing-boxes need not be kept so tight and the friction on the rods and valve stems is lessened.



FIG. 1—END VIEW BONAR STEAM TRAP.

design it is original and simple. Some of its features are worthy of enumeration.

The drain pipe is connected to a journal on the inlet trunnion.

Water passes through the inlet trunnion and pipe to the short end of the cylinder, accumulating on top of the shelf till it overflows and gradually fills the body of the cylinder.

As one end of the cylinder is longer from center of trunnions, and at the same time lighter in weight than the other end, the long end naturally becomes the heavier as the water accumulates, the result being that it falls or tilts.

In tilting the water in the short end and above the shelf is immediately thrown to the other and lowest extremity (the shelf assuming a horizontal position), insuring a powerful and positive action.

The trunnions are part of the cylinder and move with it. Fastened to the end of the outlet trunnion is the discharge valve, a ball type. When the cylinder tilts this valve moves with the trunnion. In the bottom of the valve is a loose pin, which comes in contact with a projection in the valve casing and lifts the ball off its seat.

The pressure in the cylinder therefore blows the water through the inner dis-

charge valve is protected from the knocks and rough usage which exposed valves are subject to. The casing is provided with an opening to permit of regrinding the valve in position.

The trap will remain open, making a continuous discharge, should the condensation be heavy, such as is often caused by a flood of water from boiler and other causes.

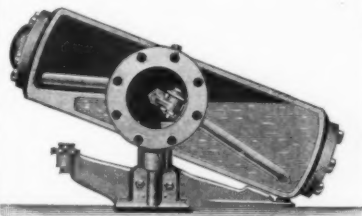


FIG. 2—SECTIONAL VIEW—TRAP TILTED AND DISCHARGING.

The discharge valve is the full area of the opening of connection for all pressures—that is, the valve opening of one-inch trap is one inch, the ball resting on the one-inch valve-seat being one and one-quarter inches.

The quick action of the trap and the accelerated and weighted motion given to it by the precipitous movement of the water to the one extremity when the cyl-

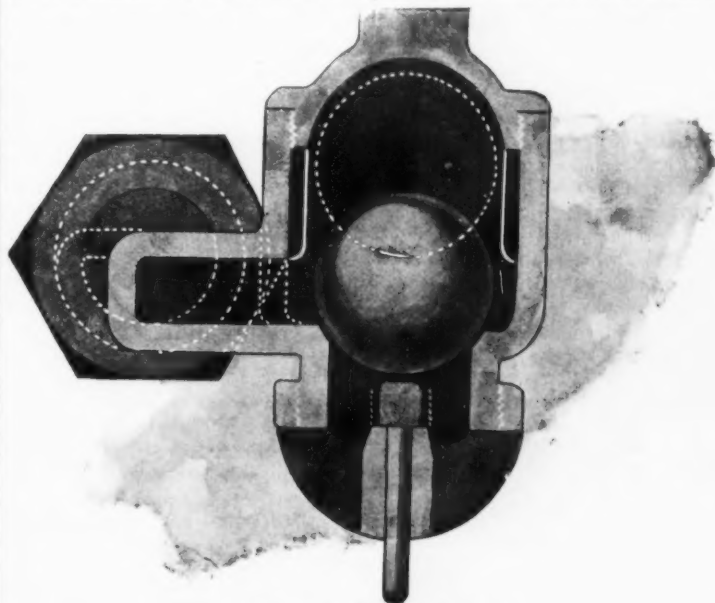


FIG. 3—DISCHARGE VALVE.

the twists and turns of valve stems, keeps changing its seat, keeps round and is easily operated.

It requires no packing on the stem—simply a little steel pin in an open guide and just long enough to lift the ball the full area of its seat. It can't bend, and there is no friction.

Automatic "Graphite" Lubricator.

The tendency of the present period among steam-users generally is toward higher pressures, and often superheated steam and the use of oil as a lubricant is not entirely satisfactory in all cases.

Powdered graphite has long been known as a superior lubricant. It is easily forced into the superficies of the cylinders and valves of steam pumps and engines.

It also increases considerably the durability of the packings.

While many engineers would use graphite, they have found considerable difficulty in procuring suitable apparatus for feeding it to the parts to be lubricated.

The single connection "Graphite" sight-feed lubricator, suitable for the purpose its name implies, is here illustrated. The graphite is fed automatically and continuously in desired quantities, and visibly by passing it through a sight feed. The cup requires but one connection to the cylinder, is very simple in construction, compact and ornamental in appearance.

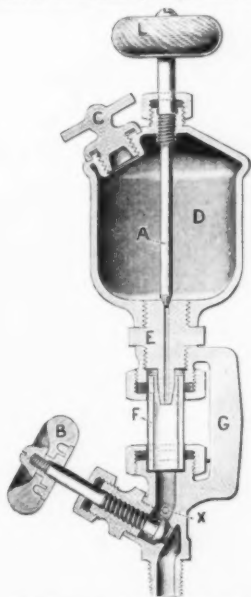
This lubricator should always be placed on the steam chest. On slide-valve engines it is only necessary to use one cup, placing it about the middle of the steam chest, but on Corliss engines it is best to use two.

As graphite is a very superior lubricant, and a small quantity will last quite a while, it should be used very economically, as a continuous feeding of same is not necessary, and the feed can occasionally be shut off.

The Lunkenheimer Company, general offices and works Cincinnati, Ohio, is the maker.

Big Furnace Output.

Replying to an inquiry as to the output of the new No. 3 furnace at Thomas, Ala., the Republic Iron & Steel Co. writes the Manufacturers' Record that "for the last thirty days it has averaged about 300 tons of pig-iron per day." The output for one day was 336 tons. Owing to the fact that this is the largest furnace in Alabama, very general interest has been awakened as to what its production would be when in full operation. The Alabama Consolidated Coal & Iron Co. is now building at Gadsden a furnace which is somewhat larger than this new furnace, the tendency in that district, as elsewhere, being larger furnaces, although it is quite generally claimed that there is a reaction in the Pittsburgh and Ohio district from the very large furnaces making 600 or 700 tons a day. The "Searles" furnace at La Follette, Tenn., is much larger than either of these, and when it gets to running at full capacity ought to average 350 tons or more a day.



GRAPHITE LUBRICATOR.

due to the motion of the moving parts, giving them a highly finished surface, thus reducing the friction and requiring very little oil.

While graphite possesses high lubricating qualities, at the same time it is not advisable to use it alone. It is a good practice to use in connection with the "Graphite" lubricator either an oil pump or sight-feed lubricator, and when this

LUMBER.

[A complete record of new mills and building operations in the South will be found in the Construction Department.]

LUMBER MARKET REVIEWS.

Baltimore.

Office Manufacturers' Record,
Baltimore, Md., October 22.

The volume of business during the week under review in the various channels of the local lumber market has been about an average for this period of the season. The demand from the usual sources, while not urgent, is very steady, and local buyers are readily supplying their various wants at ruling prices. The receipts of lumber are liberal, and stocks generally are fully ample for a moderate demand. In North Carolina pine the market is quiet, with values very steady and the foreign demand slightly improved. Cypress is steady, with a moderate inquiry. White pine continues firm, with a moderate distribution. In poplar the demand is much better, and prices still showing a firm tone. All hardwoods continue to improve, both in prices and extent of distribution. Good dry lumber is quite firm, and for oak, ash, chestnut and other woods the inquiry is improving, with values showing a hardening tendency in many cases. The export demand is unchanged, with a slight improvement in European circles. Late advices from Europe report values for hardwoods steady to firm, with prices well maintained, and also showing a hardening tendency.

Jacksonville.

[From our own Correspondent.]
Jacksonville, Fla., October 20.

The present month so far has been one of considerable activity among the saw-mills in this section, and the local lumber market has been firm in tone, with a healthy demand from the usual sources. A prominent feature in the development of the lumber industry in this section is the establishment of woodworking plants of various kinds and the utilizing of lumber heretofore thrown aside as refuse. There is also a good demand for mill sites, and shingle and lath mills are being erected at various points. Saw-mills at this and nearby points are all running at about their full capacity, and have a good supply of orders. During the past week shipments of lumber have been quite liberal, and schooners have cleared with 1,324,000 feet, distributed as follows: New York, 290,000 feet; Philadelphia, 330,000 feet; Providence, R. I., 375,000 feet, and Fall River, 320,000 feet. Clyde steamships cleared with over 2,000,000 feet of lumber and other wood products. During the week under review the announcement has been made that the firm of Robert R. Sizer & Co., a large wholesale lumber firm of New York, has found it necessary, on account of better advantages and facilities offered, to move their Southern office from Brunswick to Jacksonville. The firm has now established offices here, which will be in charge of Mr. Samuel A. Sizer, who is the Southern manager of the concern. The removal to this port will give an increased activity to the lumber industry at this port and add to the development of the State. Another important enterprise just announced is the erection of a large shingle and lath mill in this city by the Standard Cypress Co., a Michigan concern. Work has already commenced, and the contract given for driving piles for a foundation to the main building. The mill building will be 175x45 feet in dimensions. It will be a single-band and resaw and lath and shingle mill, with a capacity of 40,000 feet of lumber a day. The mill is expected to

commence operations not later than February 1, 1903.

Mobile.

[From our own Correspondent.]
Mobile, Ala., October 20.

The timber market here continues to show a firm tone, and values a shade higher. Sales of sawn timber during the week were reported at 17½ and 18 cents. Shippers are said to be offering 17½ cents freely, but 18 cents is asked, but shippers are only buying to supply immediate wants. The output is increasing, as manufacturers are stimulated on account of high prices. The lumber market is in good shape, and for primes there is a decided demand, spot prime lumber being quoted at \$23.50 to \$24. There is a good export demand for lumber, and all the mills here and at nearby points in Mississippi and Alabama are well supplied with orders, and are making heavy shipments as fast as the lumber comes from the saw. During the past week the steamer Laura cleared for Greenock with 246,000 feet of lumber and 77,500 cubic feet of sawn timber, and steamer Colombia for Boca del Toro with 21,000 feet of lumber. The total exports of lumber since September 1 amount to 9,248,951 feet, against 11,577,525 feet last season. The movement at Pensacola is more active, as the recent rains and consequent rise in the streams is bringing down logs and enabling mills to resume activity. The shipments last week from Pensacola were as follows: To Liverpool, 249,000 feet of lumber, 61 ash logs and 3410 oak staves; to Genoa, 620,000 feet of timber, 414,000 feet of lumber, 1,075,000 superficial feet of sawn timber and 14,576 cubic feet of hewn timber; to Port Natal, 840,000 feet of sawn timber and 80,000 feet of deals; to Dieppe, 205,000 feet of sawn timber and 512,000 feet of lumber; to New York, 520,000 feet of lumber. Charters reported last week were the Italian bark Aline, 718 tons, from Pensacola to Buenos Ayres with lumber at \$11; schooner La Plata, 299 tons, from Moss Point to Havana with lumber at \$6.25; British steamer Earlswood, 1306 tons, from two Gulf ports to two ports United Kingdom or Continent with timber at 80¢; November; British steamer Zanzibar, 1079 tons, from the Gulf to the Continent or Greenock with timber at 85¢; late October, and British steamer Firth of Forth, 1382 tons, from Pensacola to Holland and two ports east coast of United Kingdom with timber at 81/3, October.

New Orleans.

[From our own Correspondent.]
New Orleans, La., October 20.

Among the great commercial centers of this country perhaps none show a more rapid development in the various avenues of the lumber industry than this port. There is at present a most promising outlook for a substantial business during the fall and winter months, and both in yellow pine and cypress there is at present considerable activity, both domestic and foreign. As to yellow pine, the demand shows that dealers have difficulty in getting their orders filled promptly. Mills at all adjacent points in Louisiana and Mississippi are all rushed with orders, and exports, domestic and foreign, are increasing materially. Reports from milling sections along the various lines of railroad entering this city are most encouraging, showing a large output of yellow pine, with a brisk demand, and no excess of stocks in any section. The cypress situation is exceptionally promising, and fall orders are now coming in freely, and, compared with the same period last season, the volume of business is showing an increase of fully 20 per cent. The ad-

vance in prices by the Cypress Association in September from 50 cents to \$2.50 on different grades has had no effect upon trade, but, on the other hand, has increased the demand for lumber for prompt or near future delivery. Stocks of cypress lumber are not heavy, but are generally well assorted, and manufacturers, although sometimes short of cars, are generally satisfying all demands with considerable vigor. The hardwood situation is in better shape than usual; a considerable local demand is notable, while in an export way is much improved. Receipts recently have been more liberal, and shipments are of considerable volume. Orders have been coming in freely during the past week, and exporters are very much encouraged by the outlook. The car strike, which has restricted operations in many lines of business, is now settled, and car lines have resumed operations under new schedules based on the franchise requirements. Building operations are taking on new life, and the local demand for lumber and other material from builders, contractors and yardmen is unusually active. A heavy winter trade in a general way is anticipated, and there never was a time when hotels in this city have been so crowded at this season of the year as they are at present.

Nashville.

[From our own Correspondent.]
Nashville, Tenn., October 20.

In most departments of the lumber trade of this section conditions may be written satisfactory, and the indications point to considerable activity during the balance of the year, especially in hardwoods. In all commercial woods on this market prices for the present are at their best point, with perhaps poplar, which may show a slight advance over present figures. Receipts of logs have been quite liberal recently, and mills have all a large supply. The demand from Northern and Eastern buyers is quite pronounced, and only dry or partially dry stock is accepted. Oak in quartered white continues very scarce, both in firsts and seconds, and also common, and very little dry stock of these grades is offering. Quartered red oak is recently being called for, owing to the scarcity of white. Plain oak in red and white is very steady, with a fairly active inquiry. There is a moderate demand for ash, and wagon shops are now in the market for fair-sized lots. There is unusual activity among builders and contractors, and planing mills are all busy, while the demand for all material on an advancing market is very decided. Last week a number of Tennessee lumber manufacturers met at Knoxville to consider the plan of joining the National Hardwood Lumber Association, when a number of manufacturers joined that organization. It is stated that a strong effort is being made in this State, Mississippi, Louisiana and Arkansas to organize every saw-mill firm of any importance into a hardwood manufacturers' association of the United States.

Lumber Notes.

The shipments of lumber from Charleston, S. C., last week amounted to over 2,000,000 feet, distributed between New York, Boston and New Bedford.

The Camden Lumber Manufacturing Co. of Camden, S. C., has been chartered, with a capital of \$10,000. The incorporators are Henry Savage, H. G. Carrison and E. M. Boykin.

The Myrtlewood Lumber Co. at Waukegan, Ill., has been chartered, with a capital of \$7500. The company will conduct a general lumber business. The stockholders are W. M., B. M. and J. W. Cates.

The Augusta Lumber Co. has petitioned the city council of Augusta for the right to place a bridge over the canal on their property, and to construct a short rail track. The outlay will approximate \$15,000.

It is stated that the John B. Ransom Lumber Co. of Nashville will erect in West Nashville a hardwood lumber plant involving an outlay of \$100,000 in buildings and \$250,000 in expenditures for operation.

Flowers Bros.' planing mill, five dry-kilns and 1,000,000 feet of lumber at Blakely, Ga., were destroyed by fire on the 15th inst. The loss is about \$40,000, with a partial insurance. The saw-mill was saved.

The Clement-Ross Veneering Co., formerly of Sanford and Thomasville, N. C., which has removed its plant to Cheraw, S. C., has begun operations on an extensive scale, and is turning out some fine specimens of veneering.

The Willow Springs Lumber Co. has a large saw-mill plant nearly completed one and a-half miles south of Okahumpka, Fla. There is a kiln with capacity of 25,000 feet a day and a planer of the same capacity. About 125 men will be employed.

The Hamburg Saw-Mill Co. of Hamburg, Ashley county, Arkansas, has been chartered, with a capital stock of \$25,000. The officers of the company are J. J. Dean, president; H. H. Beekman, vice-president, and Ben T. Hawkins, secretary and treasurer.

The Cragg Mountain lands, about fifteen miles from Asheville, N. C., were sold last week at public auction. Mr. C. T. Rawls of Asheville was the highest bidder, paying \$18,980 for the property. These lands contain 5765 acres, and embrace some of the finest timber lands in the State.

The Montague Shingle & Lumber Co. of Langford, Arkansas, has been incorporated, with a capital of \$15,000. The incorporators of the company are C. H. Montague, Anna Montague, W. H. Langford, John M. Taylor, W. J. Gulbraith and C. C. Loring. Mr. C. H. Montague is president of the company.

Messrs. Robert R. Sizer & Co., large wholesale lumber dealers of New York, have removed their Southern wholesale department from Brunswick, Ga., to Jacksonville, Fla., where they have now opened offices. Better facilities for handling the Georgia and Florida trade is given as the reason of removal.

The Standard Manufacturing Co. of Laurel, Miss., has been incorporated, with a capital stock of \$75,000, for the manufacture of pins for cross-arms, handles, spokes, brackets, etc., and will begin operations about the 1st of November. R. R. Akers, manager of the Arm & Pin Co. at Mixe, will be manager of the new concern.

The shipments of lumber last week from Savannah, Ga., aggregated 3,784,783 feet, distributed as follows: New York 2,413,833 feet, Philadelphia 625,583 feet, Baltimore 213,442 feet, Elizabethport, N. J., 377,116 feet and Cape Breton 154,809 feet; previous shipments reported since September 1 amount to 21,000,000 feet, making a total of 24,784,783 feet.

Messrs. Alford Bros., extensive lumber dealers at Lewisburg, Tenn., have purchased three tracts of fine poplar timber near Tally Station, and from this purchase they will place on the market 300,000 feet of choice lumber. This firm is also cutting 1,000,000 feet of extra fine oak in the ninth district, and have purchased the Ring tract of cedar near Caney Spring.

The Fourche Lumber Co. at Esau, Perry county, Arkansas, has been incorporated. The company has a capital of \$250,000, of which \$230,000 is paid in, and will do a general timber-land and lumber-manufacturing business. The officers of the company are Nelson P. Bigelow, president; Lyman T. Walker, vice-president, and Charles Neimeyer, secretary and treasurer.

The following schooners cleared last week from Jacksonville, Fla., with full cargoes of lumber: Fannie L. Child for Fall River, 320,000 feet; Thomas Winsmore for Philadelphia, 330,000 feet; Maud H. Dudley for Providence, R. I., 375,000 feet, and Emma Knowlton for New York, 200,000 feet. The Clyde Line steamers for New York and Boston cleared with over 2,000,000 feet of lumber and other wood products.

It is stated that the Standard Cypress Co., a Michigan concern, is to erect a large shingle and lath mill at Jacksonville, Fla. Work has already commenced, and the contract given for driving 4000 piles for a foundation to the building. The mill building will be 175x45 feet in dimensions. It will be a single-band and resaw and lath and shingle mill, and will have a capacity of 40,000 feet of lumber a day. The mill is expected to be in operation not later than February 1, 1903.

A strong effort is being made in Tennessee, Mississippi, Louisiana and Arkansas to organize every saw-mill firm of any importance into the Hardwood Manufacturers' Association of the United States. A meeting of the leading lumber manufacturers of East Tennessee and Western North Carolina was held last week at Knoxville, Tenn., for the purpose of considering the question of a union with this association, when a number of manufacturers joined the organization.

It is stated that the Whispell & Collins saw-mill on the Poquosin river, Virginia, together with plant and timber holdings, tugboat, schooners, railroads, etc., has been purchased by a syndicate of Chicago and Wisconsin capitalists. They have also secured options on several thousand acres of timber land. A company known as the York County Lumber Co. will be incorporated at once. The new owners will greatly enlarge the plant, build new docks and install an extensive electric-light plant.

Trade With Hungary.

In a letter to the Manufacturers' Record Laszlo Geneo, No. 6 Isabella street, Budapest, Hungary, writes that American goods finding the readiest markets in Hungary are unbleached cotton, uncut native tobacco, unwrought copper, blue vitriol, sulphate, prosphate, turpentine, grease for soap manufacture, mineral oils, Portland cement, paraffin, straw-cutting and reaping machines, typewriters, glue, gelatine, rosin, metals, etc., and says that Hungary is largely an agricultural country, and its exports consist chiefly of agricultural products.

The October issue of the Bankers' Magazine of New York publishes a number of special articles bearing upon the twenty-eighth annual convention of the American Bankers' Association, which will be held at New Orleans November 11, 12 and 13. In addition to an editorial taking a most optimistic view of the South are published a comprehensive survey of the history of the association, illustrated with portraits of the officers of the association, a review of the banking and commercial interests of New Orleans, and a survey of the resources and progress of the South during the past twenty years. The publication is a splendid advertisement of New Orleans.

PHOSPHATES.

Phosphate Markets.

Office Manufacturers' Record, Baltimore, Md., October 22.

As in other fertilizer ingredients, the local phosphate market shows a quiet tone, with a light distribution. Manufacturers are buying only to supply present wants. Receipts at this port are light. The only charter reported for the week was the schooner Fannie Reiche, 440 tons, from Ashley river to Baltimore with phosphate rock at \$2.10. Advices from the Southern phosphate belt are unchanged, and the general situation regarded as promising for an average business during the balance of the year. The outlook in Florida is good for large shipments during November and December, and for hard rock values are very steady, with land pebble showing good features. Florida shipments for the nine months ending September 30 aggregated 595,996 tons, of which 266,715 tons were land pebble and 329,281 tons hard rock, against 567,247 tons for the same period in 1901, of which 239,406 tons were land pebble and 327,841 tons were hard rock. The demand for Carolina rock continues fair, with light offerings, and the market steady. There is a good domestic demand for Tennessee rock, and also considerable shipments of foreign material. Values continue to show a very steady tone, and the movement at Mt. Pleasant and other sections of the State is fairly active. The Phosphate of Paris, France, in its issue of October 1 has the following in reference to the home and foreign market: "The European market still remains depreciated. Large quantities of both Algerian and American phosphates have been sold within the last fifteen days at very low prices. Florida—The market for hard rock is much firmer, and disposable quantities are limited; the demands, especially from Germany, are commencing to be more pressing. Sellers can then hope for a slight improvement, and we think that this situation will continue to improve to the end of the year. Coosaw—This merchandise has become scarce, and on the whole very little is offered on the market. There still remain important needs to be satisfied, especially for the United Kingdom. Tennessee—This very special market is very firm, and the demand for the American domestic market is more and more considerable. The Virginia-Carolina Chemical Co. continues to increase its works and operations. It is still in treaty for an important business, which it must eventually absorb, and the situation of the other important operators will be from this fact benefited, and competition much more limited. At Mt. Pleasant the stocks are very light, and do not tend to increase. It will even be very difficult to deliver to all the recognized markets up to this day."

Fertilizer Ingredients.

The market for ammoniates continues quiet, with prices, however, firm and higher for certain material. Blood and tankage have both advanced, and azotine also shows a higher figure. The demand from the East and South at the moment is not urgent, but later on is expected to improve. Western packers are holding stocks firmly at advanced prices.

The following table represents the prices current at this date:

Sulphate of ammonia (gas)...	\$2.97 1/2 @ 3.00
Nitrate of soda, spot Balto...	1.90 @ 2.00
Blood	2.57 1/2 @ 2.60
Azotine (beef)	2.55 @ 2.57 1/2
Azotine (pork)	2.55 @ 2.57 1/2
Tankage (concentrated)	2.40 @ 2.42 1/2
Tankage (9 and 20)	2.52 1/2 @ 10 1/2 @ 55 & 10
Tankage (7 and 30)	21.00 @ 21.50
Fish (dry)	27.50 @ 30.00

The plant of the Nitrogen Company of St. Helena, Baltimore county, Maryland,

was destroyed by fire last week. The plant is said to have been worth \$20,000, and is a total loss. The buildings, machinery and stock were insured for \$16,000.

Phosphate and Fertilizer Notes.

Mr. T. F. Harwood, who owns quite extensive deposits of kaolin seven miles southwest of the town of Gonzales, Texas, is having the product experimented with by the Sunset Brick & Tile Co. quite successfully in the manufacture of fire-brick.

The following shipments of high-grade Florida phosphate rock were reported last week from Savannah, Ga.: Steamship Nordfaver for Stettin with 3200 tons; steamship Attrickdale for Bremen with 3175 tons and other cargo; steamship Anglo Chilean for Bremen with 2503 tons among her cargo, and steamship Myrtledeen for Hamburg with 1000 tons and other cargo.

Mr. A. D. Ledoux, vice-president and secretary of the Tennessee Chemical Co. at Nashville, Tenn., has been appointed sole agent for North America for the sale of the pyrites of the Rio Tinto Mining Co. of Spain. These mines are said to be the richest in the world, producing copper pyrites running from 50 per cent to 52 per cent sulphur. It is stated that Mr. William Lowndes of Charleston, S. C., will become general manager of the Tennessee Chemical Co.

The shipments of Florida phosphate rock from the several ports for the nine months ending September 30, 1902, were as follows: Fernandina, 148,295 tons; Tampa, 209,805 tons; Savannah, 127,110 tons; Brunswick, 17,466 tons; Port Inglis, 3320 tons, or a total of 595,996 tons, of which 266,715 tons were pebble and 329,281 tons were hard rock. Shipments in 1901 for the same period were as follows: Tampa, 244,464 tons; Punta Gorda, 35,885 tons; Fernandina, 154,334 tons; Brunswick, 18,580 tons; Savannah, 113,984 tons, or a total of 567,247 tons, of which 327,841 tons were hard rock, 203,521 tons land pebble and 35,885 tons were Peace river pebble.

TRADE NOTES.

Removal of Offices.—The Standard Roller Bearing Co., Philadelphia, has moved its offices to its new factory, Forty-eighth and Girard avenue.

Address Changes.—The address of the Baltimore office of the Penn Collieries Co. has been changed, the offices having been moved to 606 Continental Trust Building.

Southern Supply House.—The Lombard Iron Works & Supply Co., Augusta, Ga., carries in stock packing of all kinds, wire and manila rope, engine trimmings, brass goods, beltings, pulleys, saws, engines, boilers and injectors. The net price on the "Leader" injector has been reduced.

Timber for Sale.—Located on the Gulf & Ship Island Railway in Mississippi is 25,000,000 feet of long-leaf yellow pine, and close at hand a saw-mill with 25,000 feet capacity, planing mill, dry-kiln, etc. Box 77, Mize, Miss., would be glad to correspond with interested parties about this.

Mill Supplies.—The fact that B. F. Starr & Co., Baltimore, have furnished mill supplies for fifty-five years to this trade proves that there is something very good in this service and in the goods. This is a prosperous firm of mill furnishers, and, as noted above, with a long and good reputation.

M. F. Tin.—It is said that M. F. tin, made by the American Tinplate Co., W. C. Crone-meyer, agent, Carnegie Building, Pittsburgh, will last fifty years. This brand of tin is made entirely by hand labor—the "old-style" process. It has a heavy coating of pure tin and new lead, impervious to rust or atmospheric gases.

Filter Systems.—New York Continental Jewell Filtration Co., 15 Broad street, New York, is erecting extensive filter plants for water-works and manufacturing businesses. Among recent installations are those for Charleston Light & Water Co., Charleston, S. C.; city of Chester, S. C. (city plants);

Carnegie Steel Co., Homestead plant, Munhall, Pa.; the Iroquois Apartment House, Pittsburg; the Roxford Knitting Mills, Philadelphia, Pa., and Messrs. McMullen-Leavens Company, Glen Falls, N. Y.

Norfolk Property for Sale.—R. E. Crump, Room 412, Citizens' Bank Building, Norfolk, has a valuable piece of property for sale or lease, situated on the immediate water-front, Norfolk harbor. This property consists of a first-class and finely equipped foundry, boiler and machine shop. It adjoins the largest marine railway on the harbor.

For Power.—The Blaine Coal Co., Lock No. 2, Pittsburg, recently installed an engine for electric service.

The American Tobacco Co., Allen & Ginter branch, Richmond, Va., has placed in operation a direct-connected outfit.

The Athens Cotton Oil Co., Athens, Texas, has purchased an electric plant, the power being furnished by a 125-horse-power engine. The engines for the parties mentioned above were built by the Ball Engine Co., Erie, Pa.

Portland Cement.—Mr. D. Van Smith, secretary and treasurer of the Southeastern Lime & Cement Co., Charleston, S. C., reports having closed a contract to deliver 50,000 barrels of high-grade American Portland cement. This cement is to be used in the construction of extensive electrical development on the Chattahoochee river, near Atlanta, Ga. The Lehigh brand of high-grade American Portland cement will be used. This is said to be the largest single contract ever given out in the South.

Sale of Rails.—Arthur Koppel, 66-68 Broad street, New York, has received an order from the Southern Pacific Railway for 15,000 tons of heavy steel rails, eighty pounds, A. S. C. E. section. These rails are for prompt shipment, and to be delivered within the next two months. This firm is receiving many large contracts for railroad equipments. It manufactures a full line of industrial railroad goods, including cars of every description, locomotives, rails, wheels, axles, turntables, switches, etc., and keeps a large stock always on hand ready for immediate shipment.

Change of Name.—On October 1 the firm known as the Cleveland Machine Screw Co. ceased to exist, and in its stead appeared the Cleveland Automatic Machine Co., Cleveland, Ohio. This change of name was deemed advisable for the reason that the old name was a misnomer, in that it implied not the company's real business, the manufacture of automatic machines, but something connected with the production of screws and similar specialties. This company has especial facilities for the production of very fine automatic machines, on which a reputation has been established.

Foundry and Shop for Sale.—J. J. Burnett, Spartanburg, S. C., will sell for one-third cash and the rest in six and twelve months the Morgan Iron Works property of Spartanburg, at auction on December 1. The property, situated within corporate limits on land 320x300 feet, consists of the following: Office 25x36, wood; oilhouse 10x10, brick; molding shed 25x50, wood; warehouse 25x175, brick; factory 80x250, brick; foundry 40x125, brick; dry-kiln 22x60, brick; shed, limehouses, stables and four wood houses; also machinery, shafting, belting, tools and foundry patterns. The plant is in active operation.

Wood Hames.—The Todd-Obenchain Company, New Albany, Ind., has made a large addition to its plant in the way of a wood-hame factory. The services of men long successful in manufacturing wood hames have been secured, which, in connection with the instalment of the latest improved machinery, will insure a first-class output. The Todd-Obenchain Company is now taking orders for hames for November, December and January delivery. The reputation which this company has established for years of first-class chain production will doubtless secure many orders for wood hames. This firm is independent of all trusts.

High Vacuum Condensers.—The Alberger Condenser Co., 95 Liberty street, New York, reports the following firms among those recently ordering high vacuum condensing apparatus: Belt Light & Power Co., Pennsylvania Sugar Refinery, Sharon Steel Co., Port Huron Light & Power Co., Hartford Street Railway Co., Binghamton Light, Heat & Power Co. The equipment for the above plants consists of Alberger barometric or surface condensers with improved vacuum and circulating pumps and the necessary apparatus for producing the high vacuum required by the use of steam turbines, which are being installed in most of the above plants.

CONSTRUCTION DEPARTMENT.

THE MANUFACTURERS' RECORD seeks to verify every item reported in its Construction Department by a full investigation and complete correspondence with everyone interested. But it is often impossible to do this before the item must be printed, or else lose its value as news. In such cases the statements are always made as "rumored" or "reported," and not as positive items of news. If our readers will note these points they will see the necessity of the discrimination, and they will avoid accepting as a certainty matters that we explicitly state are "reports" or "rumors" only. We are always glad to have our attention called to any errors that may occur.

*Means machinery, proposals or supplies are wanted, particulars of which will be found under head of "Machinery, Proposals and Supplies Wanted."

In correspondence relating to matters reported in this paper, it will be of advantage to all concerned if it is stated that the information was gained from the Manufacturers' Record.

It often occurs that the organization of a new company in a town is not known by the postmaster, and hence letters addressed to the company are returned marked "not known." The Manufacturers' Record reports the first organization of all companies, and our readers, in seeking to get into communication with them, should be very careful in deciding how to address them, and it is often advisable to add the names of one or more incorporators as an aid to the postmaster in delivering mail.

ALABAMA.

Birmingham—Livery Company.—Birmingham Livery Co. has been incorporated by A. A. Gambill, L. J. Haley and F. H. Gafford, the capital being \$40,000.

Birmingham—Ice Plant.—Incorporated: American Ice & Industries Co., by W. H. Morris and A. F. Crane of Birmingham, J. C. Dansiger of Detroit and M. C. Cleveland of New York. The capital stock is \$100,000, and purpose to manufacture ice and conduct general cold-storage and refrigerating plant.

Birmingham—Bottling Plant.—Hawkins Springs Water Co. has been incorporated, with capital stock of \$150,000, to bottle spring water; Morris Adler, president; S. E. Thompson, vice-president, and S. M. Adler.

Florida—Brick Works.—Mr. Britt of Georgia will establish brick works at Florida.

Huntsville—Cotton Mill.—It is reported that Merrimack Manufacturing Co. (announced last week as voting increase of capital by \$1,650,000 to increase its facilities in the South) will at once build a plant of 75,000 spindles and about 2400 looms. Present Huntsville branch has 25,000 spindles and 848 looms. This addition will cost probably \$1,500,000. G. T. Marsh is local agent, and Chas. L. Lovering of Boston, Mass., is treasurer; home office of company at Lowell, Mass.

ARKANSAS.

Cabot—Telephone System.—Incorporated: Cabot & Lonoke Telephone Co., with a capital of \$1500, to operate a telephone line from Lonoke to Little Rock via Cabot, and to construct branch line not to exceed thirty miles in length; George Rule, Jr., president and treasurer; B. L. Stovall, vice-president; W. A. Thompson, secretary.

Devall Bluff—Flour Mill.—George C. Strong and associates contemplate building flour mill.

Esau—Lumber Plant.—Chartered: Fourche River Lumber Co., capitalized at \$250,000, to do a general timber-land and manufacturing business; Nelson P. Bigelow, president; Lyman T. Walker, vice-president; Charles Niemeyer, secretary and treasurer; Frank H. Hartshorn, assistant secretary-treasurer.

Eureka Springs—Stone Quarry.—Incorporated: Eureka Stone Co., capital stock \$50,

000, to quarry and manufacture stone for general construction purposes. F. Stahl of Fort Smith, Ark., is president; N. S. Marshal, B. J. Rosewater, L. L. Badger and W. C. Chynoweth, directors.

Hamburg—Saw-mill.—Chartered: Hamburg Saw-Mill Co., with a capital stock of \$25,000, to conduct saw-mill. The incorporators are J. J. Dean, H. H. Beckman and Ben. T. Hawkins.

Jonesboro—Cold-storage Plant.—J. E. Burke & Co. have completed building and will install machinery for ice-making and cold-storage plant; capacity to be two tons of ice and eight tons refrigerating.*

Langford—Lumber Plant.—Incorporated: Montague Shingle & Lumber Co., capital stock \$15,000, to manufacture lumber, shingles, ties and other timber products; C. H. Montague, president; W. J. Galbraith, vice-president; C. G. Loving, secretary and treasurer.

Newport—Patent Specialties.—Incorporated: Washburn Patent Specialties Co., capital stock \$25,000, to acquire inventions of articles of merit and utility patented by Burton A. Washburn; Burton A. Washburn, president; T. D. Kinman, vice-president; Percy Finch, secretary and treasurer.

FLORIDA.

Jacksonville—Saw-mill.—Standard Cypress Co. of Michigan has purchased site and will build saw-mill 45x175 feet for daily capacity of 40,000 feet of lumber; will also manufacture shingles, laths, etc.

Wakulla—Lumber Company.—Incorporated: Myrtlewood Lumber Co., with capital of \$7500, by W. M., B. M. and J. W. Cates.

GEORGIA.

Atlanta—Barrel Factory.—National Barrel & Package Co. of Philadelphia, Boston, etc., contemplates building a \$100,000 barrel and package factory in Atlanta.

Atlanta—Water-power-Electric Plant.—Atlanta Water & Electric Power Co. (reported in August as incorporated with \$1,500,000 capital stock, etc.) has begun construction of dam to develop power for generating electricity to be transmitted for power and lighting purposes. Dam will be 1100 feet long, 50 feet high, 65 feet wide at base, and tapering to 14 feet at top, provided with natural sluiceways. About 11,000 horse-power will be available from the development, and the first installation of machinery will be for three units of 1500 horse-power each. Contracts for nearly all of the work and for the machinery required have been awarded. Forrest Adair is vice-president, and W. H. Cushman is chief engineer in charge.

Augusta—Lumber Plant.—Augusta Lumber Co. will expend about \$15,000 for improvements to its plant.

Cedartown—Iron Mines.—Stephen Noble and George Noble of Anniston, Ala., have purchased at \$5000 a 12-acre tract of land near Cedartown, and will develop iron-ore deposits.

Cedartown—Knitting Mill.—Josephine Mills will add considerable new machinery.

Cedartown—Knitting Mill.—Wahnetta Mills will install machinery for producing a new class of goods.

Dalton—Saw-mills.—Alaculay Lumber Co. proposes the erection of several large additional saw-mills on timber properties in the State.

Liberty City (P. O. at Johnson Station)—Roofing-tile Works.—Ludowiel Roofing Tile Co. of Chicago, Ill., will establish (as was reported last week) a branch roofing-tile plant. Contracts for erection of buildings and supplying machinery have been let. It is reported about \$75,000 will be invested.

Macon—Cotton Compress.—B. B. Ford, R. D. Love, W. H. Snowden, R. C. Hazlehurst and others have organized Shippers' Compress & Warehouse Co., with capital stock of \$30,000, for compressing cotton, dealing in cotton, etc.

Mutual—Coffin Factory.—Incorporated: Mutual Coffin & Manufacturing Co., capitalized at \$3000, with privilege of increase to \$10,000, with purpose of manufacturing coffins, etc. Incorporators are C. H. Revis, H. C. Clay, J. L. Rice and Squire Thornton.

Richland—Cottonseed-oil Mill.—Richland Oil Co., reported incorporated last week (under Americans, Ga.) with \$25,000 capital, is building cotton-oil mill at Richland. Contract for buildings and machinery has been awarded.

Rossville—Land Improvement.—Park Land & Development Co. has been incorporated, with capital stock of \$25,000, to improve land for building purposes, etc. S. W. Divine is president; C. A. Lyerly, vice-president, and J. P. Hoskins, secretary, all of Chattanooga, Tenn.

Savannah—Steam Laundry.—Prager Laundry Co. has been incorporated, with capital stock of \$10,000, and privilege of increase to \$50,000, for purpose of operating steam laundry and dyeing plant.

Valdosta—Drug Company.—Valdosta Drug Co. has been incorporated, with capital stock of \$25,000, by J. M. Harvey, S. G. Etheredge, J. S. Plowden and others.

KENTUCKY.

Bentley—Brick Works.—It is stated that Northern Coal & Coke Co. will establish brick manufacturing plant.

Clay City—Stave Mill.—Eastern Kentucky Stave Co. has been incorporated, with \$100,000 capital stock, by A. M. Stiles and Swann-Day Lumber Co. of Powell, Ky.; E. S. Joutet of Winchester, Ky., and Floyd Day of Jackson, Ky., to manufacture staves.

Eddyville—Lead and Zinc Mines.—S. N. Leonard is prospecting for lead and zinc on 2000 acres of mineral land.

Kentucky—Land and Oil.—Incorporated: Kentucky Land & Oil Co., with a capital of \$50,000, by George E. Kingsley, Frank E. Ritchie and Oscar B. Guthrie, to deal in oil, timber and minerals.

Louisville—Sanitary Specialty Works.—Blair-Wedekind Company, reported incorporated with \$15,000 capital last week, acquires and will continue a plant for manufacturing sanitary and dental specialties. Enlargements will probably be made soon.

Louisville—Increased Capital.—Jefferson County Brick Co. is increasing capital stock from \$9000 to \$25,000.

Madisonville—Tiling Factory.—G. R. Lynn and William Riggins contemplate building a tiling factory.

Marion—Flour-spar and Zinc Mines.—Marion Mineral Co., capitalized at \$100,000, has begun the development of its flour-spar and zinc properties in Crittenden county, Kentucky, and Hardin county, Illinois. No machinery is required as yet. L. H. James is president.

New Haven—Flour Mill.—C. H. Brown & Co. will add a 25 to 30-barrel flour mill to their feed mill.

Paris—Bottling Plant.—Upper Bluebell Springs Co. has been incorporated, with \$10,000 capital stock, by A. P. Allis, W. H. Ingles and N. F. Brent of Paris, W. P. Strader of Lexington, Ky., and Hugh Montgomery; purpose, to bottle mineral water.

South Carrollton—Coal Mine.—W. P. Robertson Developing Co. has begun sinking shaft to coal deposits, and will soon begin producing.

LOUISIANA.

Gueydan—Machine Works.—Gueydan Machine and Pipe Works has purchased site for erection of addition to its plant.

Lake Charles—Air-brake Works.—Organized: Manson Air Brake Attachment Co., with \$250,000 capital, to market the attachment patented by T. C. Manson, which applies air automatically on any car the moment it leaves the rails; D. R. Swift, president; D. M. Foster, secretary; Frank Roberts, treasurer; T. C. Manson, vice-president and general manager.

Napoleonville—Bottling Plant, etc.—Napoleonville Ice Co., reported last week, has ice plant erected and proposes adding carbonated drinks factory and bottling plant.*

New Orleans—Garment Factory.—Incorporated: Union Garment Co., Ltd., capital stock \$50,000, by Francis J. A. Erlinger, B. Turkheimer and M. Alaynick and others, to manufacture garments.

MARYLAND.

Baltimore—Shoe Factory.—Champion Shoe Manufacturing Co., reported incorporated with \$25,000 capital last week, continues the plant formerly owned by Enterprise Shoe Co. at Holliday and Hillen streets. A. P. Gray is general manager.

Baltimore—Enamel Company.—Incorporated: Baltimore Enamel & Novelty Co., by William Little of Philadelphia and Henry A. Brehm, Theodore Zuerman, Harold B. Little and Arthur P. Claridge. The capital stock is \$50,000.

Baltimore—Artificial-fuel Factory.—A company is being organized to manufacture and introduce an artificial fuel known as "terralig," invented by Dr. Jacob Meilinger, 230 Madison avenue. It is said that New York and Philadelphia capitalists will be largely interested.

Baltimore—Electric Plant.—Woman's College has awarded a contract for steam-heating and electric-lighting plants to Creek, Horner & Co. at \$11,139.

Baltimore—Ice-cream Freezer Factory.—Chartered: Industrial Manufacturing Co., to manufacture and deal in ice-cream freezers, etc., by Joseph Conwell, A. O. Brickman and Robert S. Welschelder of Baltimore, and J. W. Wilson, Washington, D. C. Capital stock is \$60,000.

Baltimore—Iron Works.—Chartered: Chesapeake Iron Works, with \$15,000 capital, to erect a plant for the manufacture of nuts and bolts. Charles L. Applegarth, C. G. Smith, John Burneburg, John G. Doan and Frank Chavannes are the incorporators.

Baltimore—Shoe-machinery Works.—Allen G. Williams Machinery Co. has been incorporated, with capital stock of \$10,000, and will establish plant for making shoe machinery at 214 North Holliday street. Henry Clark (president National Howard Bank), Edw. M. Hammond, James Clement, Thos. H. Sahn and J. E. Martindale of Baltimore and Allen G. Williams of Massachusetts are interested.

Baltimore—Steel-castings Plant.—Local financiers and manufacturers are planning the organization of a \$2,100,000 stock company for the purpose of building a plant to make steel castings of all kinds, but especially railroad castings. Chas. T. Crane, president Farmers and Merchants' National Bank; Lloyd L. Jackson, H. Crawford Black, John R. Bland, J. W. Middendorf and others are interested.

Baltimore—Warehousing, etc.—Incorporated: Baltimore Fidelity Company Warehouse Co., for forwarding and warehousing cotton, etc., by Albert G. Oba, Frank S. Hambleton, Thomas L. Benz, William Cabell Bruce and Thomas E. Witters. The capital stock is \$5000.

Baltimore—Water-Electrical Power Developments.—The engineers who, in the interest of the Continental Trust Co., have been investigating the possibility of using the Susquehanna river for the development of great electrical power, as is done at Niagara, have reported favorably. Plans for the work have been completed with the exception of certain details of hydraulic engineering. It is proposed to furnish light and power to Baltimore and many towns in the northern part of the State between this city and the river, and also Elkton, Wilmington, Del., and other points east of the river. The Continental Trust Co., which has an option on the purchase of the United Electric & Power Co. of Baltimore until November 15, it is reported, will soon close the deal, involving nearly \$1,000,000. A new company probably will be formed to take in this and other lighting and power companies as part of the Susquehanna power plan.

Bladensburg—Corn and Feed Mill.—Moses Edlavitch contemplates installing cornmeal mill and feed plant.

Cumberland—Air-motor Works.—Wilbur J. Johnson has invented an air motor, propelled by power within itself. Mr. Johnson, John J. Howe, William A. Ingman, Jr., George Hermann and Charles H. Wolford have incorporated Johnson-Ingman Air Motor Co. with \$250,000 capital, to manufacture the motor.

Hagerstown—Knitting Mill.—Black Rock Knitting Co. has been incorporated, with \$10,000 capital, and completed mill of 100 machines, etc.; S. H. Welkenmayer, secretary.

Hancock—Glass-sand Plant.—Pennsylvania Glass Sand Co. of Pittsburgh, Pa., has purchased and will operate the Hancock White Sand Co.'s glass-sand plant, paying therefor about \$100,000. Company will build an addition to plant at a cost of about \$40,000.

Texas—Stone Quarries.—Thomas N. Lee Company has been incorporated by Thomas N. Lee of Baltimore county, Alexander L. Mitchell and W. H. De Courcy Wright of Baltimore, Carrington G. Arnold and Cassandra L. Arnold of New York. The capital is \$10,000.

MISSISSIPPI.

Bay St. Louis—Toilet Preparations Factory.—August Rohl will establish plant for manufacturing toilet preparations, operating at Rohl Manufacturing Co.

Gulfport—Mercantile.—Incorporated: Coleman-Johnson Company, with a capital of \$10,000, by F. M. Coleman, W. T. Johnson, S. L. Price and others.

Laurel—Woodworking Plant.—Standard Manufacturing Co., with a capital stock of \$75,000, has been incorporated for the manufacture of cross-arm pins, axe handles, brackets, spokes, etc. R. R. Akers will be manager.

Malvern—Flour Mill, etc.—A company has been organized, with capital stock of \$25,000, purchased and will operate the Malvern Roller Mills; will also probably install ice and cold-storage plant; H. W. Cooper, president; J. H. Badams, vice-president, and R. H. McHenry, secretary.

Seranton—Cannery.—Pascagoula Canning Co. has been organized, with capital stock of \$12,000; H. Bloomfield, chairman, and W. G. Parker, secretary. Building has been erected and canning machinery contracted for.

Seranton—Electric-light Plant, etc.—L. S. Anderson has purchased the municipal electric-light plant and water-works, and it is reported will make extensive improvements.

Webb—Piano Factory.—It is reported that C. C. Russell of Chicago, Ill., will incorporate a \$100,000 stock company to establish piano factory at Webb.

MISSOURI.

Carthage—Lead and Zinc Company.—Chartered: Reynoldsville Lead & Zinc Co., capital \$25,000, by J. H. Cook, J. Van Reed, G. J. Corwin and others.

Hannibal—Car-wheel Foundry.—Treat Manufacturing Co. will build an addition 90x100 to its car-wheel foundry; walls will be constructed of cement and roofing of iron.

Kansas City—Sugar Refinery.—Ohio Maple Syrup & Sugar Refining Co., capital \$12,000, has been chartered by H. E. Baxter, B. J. Scott, P. B. Gunder and others.

Kansas City—Plumbing, etc.—Incorporated: Cotton-McDonnell Plumbing & Heating Co., capital \$2000, by Timothy Cotton, John McDonnell and John T. McDonnell.

Rich Hill—Flour Mills, etc.—Flanigan Mills & Elevator Co., capital stock \$200,000, has been incorporated by Charles H., E. T., L. D. and George M. Flanigan.

St. Joseph—Cereal Mill.—Proposed company recently noted will organize with J. C. Greg, president, and L. W. Burgdefer, general manager, and contracts have not yet been let for erection and for equipment. Building will be 65x120 feet, three stories high; daily capacity to be 350 crates of forty pounds each. Battle Creek (Mich.) manufacturers are interested, and James C. Keith of that city is engineer in charge. Address president.*

St. Louis—Construction.—Chartered: Williamson-Blake Construction Co., capital \$20,000, by W. F. Williamson, J. H. Williamson, John S. Blake and James P. Blake.

St. Louis—Zinc Company.—Incorporated: Southwestern Zinc Co. will increase capital from \$50,000 to \$200,000.

St. Louis—Capital Increased.—Campbell Iron Co. will increase capital stock from \$20,000 to \$120,000.

St. Louis—Piano Company.—Bollman Bros. Piano Co., with a capital of \$100,000, has been incorporated by Otto Bollman, Oscar H. Bollman, Herman H. Bollman and Fred W. Bollman.

NORTH CAROLINA.

Elizabeth City—Telephone System.—Chartered: Norfolk & Carolina Telephone & Telegraph Co., with capital stock of \$50,000, which may be increased to \$250,000, by C. R. Johnson of Portsmouth, Va.; L. D. Starke and George T. Wallace of Norfolk, M. L. Guirkin, C. Guirkin, Lon Mattie McCabe, Joseph T. McCabe and George W. Ward of Elizabeth City.

Elkin—Knitting Mill.—Elkin Knitting Mills has been incorporated, with capital stock of \$10,000, to establish plant of twenty machines, etc. Thos. J. Lillard is president.

Teers—Flour Mill.—Sykes & Oldham contemplate building flour mill.

Tryon—Knitting Mill.—Proposed knitting company recently reported has organized with A. D. Beaton, president; T. T. Ballenger, vice-president, and F. P. Bacon, secretary, to establish plant.

Wilmington—Textile Manufacturing, etc.—J. Walter Williamson, Edwin C. Holt and Clayton Giles, Jr., have incorporated Sterling Manufacturing Co., with capital stock of \$50,000, for manufacturing textile fabrics, finishing same, etc.

Wilmington—Rice Farm.—Chartered: Cape Fear Rice Company, with authorized capital stock of \$200,000, by Burdiss Anderson of Boardman, N. C.; John H. Gore, Jr., and

James W. Sneed of Wilmington; purpose, to conduct a rice farm.

Wilmington—Tobacco Stemmy, etc.—It is proposed to organize a company, with capital of \$30,000, for the establishment of a tobacco warehouse, stemmy and prizery. George O. Gaylord, W. E. Worth, M. W. Jacobi and others are interested.

SOUTH CAROLINA.

Athens—Flour Mill and Gln.—Chartered: Athens Milling Co., to operate flour and grist mill; capital stock \$3000. The incorporators are G. W. Nichols of Traveler's Rest, S. C., and D. N. Johnson of Marydel, S. C.

Camden—Lumber Manufacturing.—Chartered: Camden Lumber Manufacturing Co., with capital stock of \$10,000, by Henry Savage, H. G. Garrison and E. M. Boykin.

Campobello—Cotton Gln.—J. J. Swain will rebuild next season his burned cotton gln.*

Charleston—Dry-dock, etc.—Navy Department has awarded contract to New York Continental Jewell Filtration Co. of New York city for construction of granite and concrete dry-dock at Charleston; will cost about \$916,000.

Columbia—River Boat Company.—Columbia & Georgetown Steamboat Co., recently chartered, has organized with J. C. Haskell, president, and W. J. Murray, treasurer, to operate river boats. Capital stock is \$50,000.

Loris—Tobacco Company.—Chartered: Loris Tobacco Warehouse Co., capital stock \$3000, by J. C. Bryant, D. D. Harrelson, J. Q. Graham and D. A. Spivey.

McCormick—Cotton Mill.—A movement is on foot for erection of cotton factory. B. F. Manidin is interested.

Newberry—Telephone System.—Southern Bell Telephone Co. has applied for local franchise. Local representative is J. Y. Culbreath.

Wedgfield—Cannery.—Jas. M. Caldwell contemplates establishing cannery of fifteen to twenty dozen cans capacity daily; to can fruit and vegetables.*

Woodruff—Water-power Development.—A. B. Groce of Spartanburg has purchased Van Patton Shoals, and will, it is reported, develop water-power. It is stated 1200 horsepower is available.

TENNESSEE.

Harriman—Sewerage System.—City has ordered plans and specifications for its proposed sanitary sewerage system recently mentioned. Collier & Brown, English-American Building, Atlanta, Ga., are preparing said plans.

Isoline—Coal Mines.—Clear Creek Coal Co., reported chartered, etc., last week, will organize with H. Crawford Black, Chamber of Commerce Building, Baltimore, Md., president; Lloyd Lowndes of Cumberland, Md., vice-president, and Van Lear Black of Baltimore, secretary-treasurer. They, with W. H. Dawson of Baltimore and E. Watkins of Chattanooga, will be the directors. Capital will be \$500,000, with privilege of doubling. The properties developed are producing 500 to 600 tons daily, and this will be further increased.

Memphis—Street Paving.—Memphis Street Railway Co. will expend about \$150,000 for street improvements; Frank G. Jones, president.

Memphis—Bag Factory.—Gulf Bag Co. of New Orleans, La., and other cities will establish at Memphis a plant for making bags of burlap and other cloth; location, foot of Poplar street.

Memphis—Embalming-fluid Factory.—C. H. Lewis, H. Z. Lewis, J. W. Thomson, W. R. Barksdale and R. P. Waring, Jr., have chartered Lewis & Lewis Company, capitalized at \$5000, with right to increase to \$50,000, to manufacture the "Rigid Embalming Fluid."

Memphis—Transfer Company.—Robinson Transfer Co. has asked for charter, its incorporators being J. S. Robinson, W. T. Stark, John Pritchard, William A. Buckner and Rhea P. Carey. The capital stock is placed at \$25,000.

Memphis—Cooperage.—Chartered: Big Bend Cooperage Co., with capital stock of \$25,000, by G. W. Walker (president), C. A. Walker (secretary), D. W. Walker, G. A. Rhodes and Alfred Bailey.

Nashville—Mining, etc.—Incorporated: Dixon Mining, Improvement & Development Co., with capital stock of \$10,000, by Thomas J. Dixon, Charles H. Jackson, B. M. Webb, Frank B. Giles and David H. Miner. Dixon Mining, Investment & Development Co., capital stock \$12,000, has been incorporated by the same parties.

Nashville—Publishing.—Incorporated: Olymplan Publishing Co., capital stock \$5000, by William L. Dudley, J. K. Stevenson, Edwin Wiley, H. C. Tolman and T. H. Brewer.

Nashville—Clothing Factory.—National Woolen Co. has let contract to J. H. Yeaman, architect and builder, for erection of \$15,000 building 55x137 feet, to have capacity for 150 to 200 machines. Company manufactures trousers, overalls and duck goods.

Nashville—Lumber Plant.—John B. Ransom Lumber Co. has 10-acre site for erection of \$100,000 plant.

Shelbyville—Vehicle Factory.—Robinson & McGill will establish buggy and wagon factory. Buildings have been prepared and machinery is being ordered.

TEXAS.

Alba—Coal Mines.—T. L. Lowrie will develop coal mines.

Bay City—Hardware.—Incorporated: Bay City Hardware Co., capital stock \$20,000, by A. Stone, F. M. Leake, N. D. Stewart and O. M. Stone.

Beaumont—Petroleum.—Chartered: Eveene Petroleum Co., capital stock \$25,000, by H. F. Center, J. W. Sloan and Fred W. Freeman.

Beaumont—Optical Company.—Chartered: Blase Optical Co., capital stock \$2500, by Mark Weiss, W. O. Blase and H. H. Luney.

Beaumont—Oil Wells.—Chartered: Oteri Oil Co., with capital stock of \$1,000,000, by Santos Oteri, Wm. Adler, L. H. Fairchild, Jacob Weluberger, Solomon Reimach, C. H. Ellis and Charles De Lems, all of New Orleans, La.; purpose, to drill for oil.

Beaumont—Oil Wells.—Incorporated: Seurlock-Holcomb Syndicate, capital stock \$40,000, to drill for oil, by Lewis H. Seurlock, C. E. Burrows, John C. Howe and R. L. Cox.

Bonham—Mercantile.—Gale & Chaney Mercantile Co. has organized, with capital stock of \$75,000; R. D. Chaney, president; P. G. Taylor, vice-president, and A. Gale, secretary.

Coparas Cove—Gold Mines.—Cove Surprise Gold Mining & Milling Co. has been organized, with capital stock of \$100,000, to develop gold mines. John H. Clements is president; E. A. McDowell, vice-president; J. S. Clements, secretary, and O. F. Wells, manager.

Dublin—Creamery.—Dublin Dairy Co. proposes the establishment of a creamery. J. A. Johnson is manager.*

Eagle Pass—Bridge.—Incorporated: Porfirio Diaz & Eagle Pass Bridge Co., capital stock \$100,000, to build a bridge across the Rio Grande river at Eagle Pass into Ciudad Porfirio Diaz, Mexico; incorporators, James B. Van Woert and Geo. Van Hoern of New York city, Samuel Bryant of Woodside, N. Y.; Wm. Hillis of Eagle Pass, and John K. Beretta of Laredo, Texas.

El Paso—Telephone System.—Chartered: Southern Independent Telephone Co., capital stock \$500,000, to construct telephone system, by Annie McElroy Brett, Iona Miller, J. B. Badger and R. S. Sprague, all of El Paso, and O. P. Van Swearingen of Cleveland, Ohio.

Laredo—Bridge.—Incorporated: Laredo Bridge Co., capital stock \$150,000, to build a bridge across the Rio Grande river at Laredo into Nuevo Laredo, Mexico; incorporators, James B. Van Woert and Geo. M. Van Hoern of New York city, James K. Beretta of Laredo and others.

Matthews—Cattle Company.—Matthews Land & Cattle Co. has changed name to Reynolds Cattle Co., increasing capital stock from \$100,000 to \$200,000.

Orange—Cotton Mill.—A. M. Hatcher of Houston, Texas, represents capitalists who have submitted proposition for establishment of \$100,000 cotton mill at Orange.

Palestine—Electric-light Plant.—J. S. Tittle of St. Louis, Mo., and R. V. Gray of Texarkana have received franchise for establishing electric-light plant, gas works and heating plants.

Rosebud—Increase Capital.—Rosebud Oil & Cotton Co. has increased capital from \$75,000 to \$100,000.

San Antonio—Mining.—Incorporated: Refugio Mining Co., capital stock \$5000, by Otto Koehler, Otto Wahrmond of San Antonio, Henry Wahrmond of Fredericksburg, Texas, and Amados Cardenas of the State of Coahuila, Mexico.

San Augustine—Brick Works.—Incorporated: San Augustine Brick Co., capital stock \$10,000, by J. W. Saunders, Henry Linn, E. D. Downs, J. C. Anderson, John Thomas, Jr., Linn Thomas and A. S. Busby, to manufacture bricks.

San Marcos—Ice Manufacturing.—Chartered: San Marcos Ice Manufacturing Co., capitalized at \$50,000, by William Green, Ed. Green and W. W. Gieson, Jr.

Tyler—Confectionery.—Chartered: Tyler Confectionery Co., capital stock \$1500, by J. E. Marcano, O. O. Griggs and R. P. Dorrough.

Tyler—Telephone System.—Incorporated: Globe Telephone Co., capital stock \$25,000, to construct and operate toll lines, exchanges and offices, by S. F. Richardson, C. C. Crens, J. T. Harris, J. R. Adams, all of Tyler, and J. B. Cave of Dallas, Texas.

Victoria—Irrigation, etc.—Incorporated: Refugio Land & Irrigation Co., capital stock \$600,000, by J. C. McDowell of Pittsburg, Pa.; J. C. Dilworth of Gonzales, Texas; P. R. Austin of San Antonio, Texas; J. K. Hexter and F. C. Proctor of Victoria.

Waco—Power and Manufacturing.—Incorporated: Colorado Power & Manufacturing Co., capital stock \$12,000, by W. W. Seley, R. H. Chatham and S. F. Harrell of Waco, and Rod Oliver of Dallas.

Wharton—Steam Laundry.—Manor Stafford and T. E. Linn will establish a steam laundry; building and machinery has been purchased.

VIRGINIA.

Bassett—Furniture Factory.—Bassett Furniture Co. has been organized to establish factory. Contract for erection of required building has been let to Stone & Bassett.*

Big Stone Gap—Land Improvement, etc.—Big Stone Gap Improvement Co. will reorganize, with capitalization of \$300,000, to improve lands as sites for industrial purposes, etc.; R. A. Ayres, president; J. F. Bullitt, vice-president, and John W. Chalkley, secretary.

Covington—Iron Mines.—A company is being formed, with capital stock of \$1,000,000, and will apply for charter to develop the iron fields of Potts Creek valley. J. N. Camden, J. W. MacCorkle and others of Charleston, W. Va., are interested.

Gayton—Coal Mines.—Henry Lee Lorraine, F. C. Christian, both of Richmond, Va., and others have purchased at \$105,000 about 3000 acres of coal lands near Gayton, and will organize company for developing the properties.

Newport News—Shoe Factory.—Eagle Shoe Co. of Fredericksburg, Va., will remove its shoe factory to Newport News.

Norfolk—Land Company.—Chartered: Virginia-Carolina Land Co., with capital stock of from \$5000 to \$25,000; president, Hugh C. Davis; vice-president, C. J. Collins; secretary and treasurer, R. W. Tomlin.

Norfolk—Cotton-bagging Mill.—Margollus Cotton Mills Co. has been incorporated, with capital stock of \$50,000, and privilege of increase to \$100,000, to own and operate plant recently reported as being built by Margollus & Co.; R. Margollus, president, and D. Margollus, general manager.

Norfolk—Peanut Factory.—National Cooperative Peanut Co. will be organized and incorporated to establish peanut factories, etc., capital stock to be \$50,000, with privilege of increase to \$150,000. A. S. J. Gammon, Arthur Paratt, Theo. N. Ramsay and others are interested.

Norton—Coal Mines.—W. J. Willets of Three Rivers, Mich., has purchased the properties of the Norton Coal Co. at Norton, and will develop same. L. O. Pettit, now of Big Stone Gap, Va., will become general manager for the new owner. It is reported 300 coke ovens will be built in connection with the mines.

Norton—Coal Mines.—Kelly & Irvine of Big Stone Gap, Va., have purchased and begun development of coal mines near Norton.

Richmond—Brewery.—Rosenegk Brewing Co. has let contracts for \$80,000 worth of improvements to its plant, recently referred to. Betterments will include three cold-storage rooms with steel vats and refrigerating machinery of 100 tons capacity, two-story bottling plant 40x60 feet, etc. A. C. Beford of Richmond is builder, and O. C. Wolff of Philadelphia is architect in charge. All machinery has been ordered.

Shawsville—Cannery.—Charles R. Colhoun intends to establish cannery for tomatoes, daily capacity to be 100 to 150 cases.*

WEST VIRGINIA.

Grafton—Broom Factory.—A. F. Ward and others will establish a broom factory.

Grafton—Plating Works.—Grafton Novelty & Plating Co. has been chartered, with capital stock of \$10,000, leased building and will install machinery for nickel, silver and gold plating, and for making metal novelties; John H. Holt, president; F. A. Rauscher, secretary, and I. E. Gooding, general manager.

Huger—Coal Mines.—Harry B. Olmstead of Columbus, Ohio, recently reported as to organize company to develop coal mines near Huger, will eventually transfer the property to the Middle States Coal Co., successor to the Mancourt-Olmstead Coal Co., Hayden Building, Columbus, Ohio. This company will incorporate with capital stock of \$300,000.

600 to \$500,000; Harry Olmstead, president; Thos. D. Huntington, treasurer, and F. G. Hatton, secretary. Contracts for machinery have not been awarded. George Martin of Welch, W. Va., is engineer in charge.

Leewood—Coal Mines.—Leewood Colliery Co. has been incorporated, with authorized capital of \$100,000, for developing coal mines, by William Brown, P. W. Howel and John Faulkner of Mt. Carbon, W. Va.; V. L. Black and Frank Fox of Charleston, W. Va.

Sisteraville—Glass Works.—Tyler Window Glass Co. has let contract to C. L. Jacobs of Wellsburg, W. Va., for construction of the furnaces for its \$50,000 plant; this contract involves \$6700. The buildings will cost \$9000.

Wheeling—Glass-machine Works.—It is reported the Wolcott Glass Machine Co. will be organized to manufacture glass-blowing machines. The capital stock will be \$100,000.

Wheeling—Oil Wells.—Hlyson Oil Co. has increased its capital stock from \$300,000 to \$1,000,000, and is extending its operations in oil-well drilling and operation.

Wheeling—Industrial Plant.—W. C. Yates of Chicago contemplates establishing an industrial plant (character not stated) at Wheeling. Mr. Yates is registered at the McClure, Wheeling.

OKLAHOMA TERRITORY.

Aline—Creamery.—Incorporated: Aline Creamery Co., capital \$2000, by A. D. Swander and J. R. Burrows of Lake, O. T.; William Campbell, John H. Hall and L. C. Thomas of Aline.

El Reno—Construction.—Incorporated: United States Construction Co., with \$1,000,000 capital stock, by W. S. McCaul and W. J. Stoneburner of Kansas City, Mo., and George H. Willis of El Reno.

Enid—Bridge Works.—Southwest Bridge & Iron Co. has been incorporated, with \$100,000 capital, for the purpose of engaging in the erection of bridges. G. H. Bradford, E. Miles, H. Anthony and J. F. Warren of Wichita, Kan.; N. Sturgis, H. H. Watkins, J. B. Linden and J. P. Renshaw of Enid, are the incorporators.

Enid—Bottling Plant.—Incorporated: Enid Bottling Works, with \$15,000 capital, by R. E. Messall, J. E. Levers and Clarence Groch.

Groch—Telephone System.—Chartered: Grand Telephone & Telegraph Co., with \$25,000 capital stock, by David Selby, T. S. Beran, O. E. Nult, O. C. Newman, S. Y. Cupp, to build a telephone line to Gage and Cheyenne.

Hobart—Lumber Company.—Chartered: Hobart Lumber & Fuel Co., with \$30,000 capital stock, by R. F. Brown, W. A. Walker and D. S. Hill.

Lawton—Land Company.—Incorporated: Kiowa-Comanche Land Co., with \$25,000 capital, by E. E. and H. C. Moulder and J. L. Barbee.

Oklahoma City—Townsite Company.—Incorporated: Oklahoma Townsite Co., with \$100,000 capital, by C. E. Bennett, John Threadgill and W. F. Harn.

Pawhuska—Mercantile.—Chartered: Osage Mercantile Co., with \$15,000 capital stock, by W. S. Matthews, E. F. Sparrow, W. T. Mosler, N. F. Overfield and W. C. Tucker.

Richards—Mining, etc.—Chartered: Richards Oil & Mining Co., with \$500,000 capital, by L. Burris of Richards, James Hughey of Cleo, James Vicker of Dane, O. T.; Thomas Griffith of Enid, O. T.; H. Clay Willis of Fairview, O. T.

Rusk—Mining.—Incorporated: Rusk Mining & Prospecting Co., with \$100,000 capital stock, by J. W. and J. F. Discus, W. T. Ruby and L. H. Rankin of Rusk, Y. N.; J. Nesbitt and D. O. McGee of Cleo, O. T., and H. C. Noah of Alva, O. T.

Wildman—Oil Wells.—Chartered: Wildman Oil Co., with \$1,500,000 capital, by F. H. Irons of Hope, Ark.; E. F. Sears, Joe Johnson, C. Zerkle and P. Waldron, Jr., of Wildman, to drill for oil.

BURNED.

Baltimore, Md.—D. Wilson & Sons' furniture factory; loss about \$80,000.

Blakely, Ga.—Flower Bros.' lumber plant; loss \$40,000.

BUILDING NOTES.

*Means machinery, proposals or supplies are wanted, particulars of which will be found under head of "Machinery, Proposals and Supplies Wanted."

Annapolis, Md.—Theater.—Colonial Theater Co. (E. D. Wolfe of Norfolk, Va., president) has accepted plans by Thompson & Neff of Norfolk, Va., for its proposed theater.

Anniston, Ala.—Postoffice Building.—Miles & Bradt of Atlanta, Ga., have received contract at \$59,000 for erection of postoffice building at Anniston.

Atlanta, Ga.—School.—John Hecker has contract for erection of \$11,000 school building for State Normal College.

Baltimore, Md.—Theater.—George Fawcett, Chase's Theater, Baltimore, and Jake Wells of Richmond, Va., will build theater in Baltimore.

Baltimore, Md.—Pier.—Baltimore & Ohio Railroad Co. is asking bids on the construction of its proposed pier 800 feet long, 160 feet wide, to cost about \$600,000. W. Ancker, superintendent of floating equipment, has plans and specifications, which he prepared.

Baltimore, Md.—School.—John Cowan has received contract to erect proposed three-story stone building 64x100 feet, etc., to cost about \$45,000, for Maryland School for Feeble Minded. J. C. Gott prepared plans.

Baltimore, Md.—Theater.—It is reported that Chas. M. Anderson, architect, is preparing plans for construction of theater (by remodeling old building) at a cost of \$50,000.

Birmingham, Ala.—Store Buildings.—L. A. Townley has let contract for erection of three store buildings to cost \$12,000.

Bronson, Fla.—Office Building.—Levy county commissioners ask plans and specifications offered with bids for erection of proposed clerk's office and vault mentioned last week. Address "Clerk of Levy County" A. P. Hardee.

Georgetown, D. C.—Church.—Thos. C. Kennedy of Baltimore, Md., will prepare plans for \$50,000 parish hall for Holy Trinity Catholic Church, Georgetown.

Hazlehurst, Miss.—Jail.—Jail contract referred to last week was let to Pauly Jail Building Co. of St. Louis, Mo., through F. B. & W. S. Hull of Jackson, Miss., who will have charge of construction. Pauly company furnishes all steel and iron work.

Kaufman, Texas.—Business Block.—W. T. McRae of Crandall, Texas, has contract to build brick business block, two buildings 25x100 feet and one 50x100 feet.

Norfolk, Va.—Hotel.—New Atlantic Hotel Co., C. M. Randolph, president, has plans and specifications prepared by Brees & Ferguson for its proposed hotel; to be seven stories high, constructed of steel, terra cotta, white marble and brick; 150 rooms; 75 bath-rooms, etc.

Richmond, Va.—Home.—I. O. O. F. will build home at a cost of about \$20,000. Address care Hill Montague.

Richmond, Va.—Hotel.—Mrs. A. D. Atkinson of Lexington, Va., proposes erecting a hotel at Richmond. Structure is to cost \$250,000, be of fireproof construction, have 240 guest rooms, all modern improvements, etc.

Savannah, Ga.—Office Building.—National Bank of Savannah and Oglethorpe Savings & Trust Co. will erect office building.

Texarkana, Texas.—Hospital.—J. D. Fitzgibbons has contract at about \$100,000 for erection of railroad hospital.

Tuscaloosa, Ala.—Courthouse.—Tuscaloosa county will advertise for plans and specifications for courthouse to cost not more than \$7000. Address "County Commissioners."

Washington, D. C.—School.—Gleason & Humphrey of Baltimore, Md., have contract to erect \$40,000 school for St. Aloysius Catholic Church, Washington. Plans by Thos. C. Kennedy of Baltimore.

Wheeling, W. Va.—Depots.—It is stated Baltimore & Ohio Railroad Co. will build new passenger and freight depots and otherwise improve facilities at Wheeling. Geo. L. Potter, Baltimore, Md., is general manager.

RAILROAD CONSTRUCTION.

Railways.

Alexandria, La.—A. L. Phillips of St. Louis, Mo., with a corps of engineers, will, it is reported, make a survey for a railroad from Alexandria to Baton Rouge, and thence to New Orleans.

Atlanta, Ga.—It is reported that the Seaboard Air Line is securing rights of way for an independent entrance to Atlanta. W. W. Gwathmey, Jr., is chief engineer, Portsmouth, Va.

Atlanta, Ga.—Messrs. G. S. & F. M. Scofield write to the Manufacturers' Record confirming the report that they have secured franchises for an electric railway from Atlanta to Tallulah Falls, about 100 miles, and that they will push the work as rapidly as possible.

Austin, Texas.—The Trinity & Brazos Valley Railway Co. has filed a charter to build its proposed line from Hillsboro southeast (probably to Beaumont) and northwest to

Fort Worth, about 300 miles. The officers are J. H. B. House of Houston, president; R. H. Baker of Austin, vice-president and general manager; E. Sammons of Austin, secretary and treasurer; James A. Parker of Boston, assistant treasurer; William Maloney of San Marcos, superintendent of construction; E. M. House of Austin, chairman of the board. Others reported to be interested are T. W. House of Houston, J. C. McDowell of Pittsburgh, general manager of the J. M. Guffey Petroleum Co.; W. C. McLelland of Dallas, Stephen Young and S. R. Wrightington of Boston. It is reported that from Cleburne via Hillsboro and Hubbard to Mexia, about seventy-five miles, will be built immediately.

Berryville, Ark.—The St. Louis & North Arkansas Railroad will, it is reported, build from Gilbert to Little Rock. S. W. Lee is chief engineer, Eureka Springs, Ark.

Birmingham, Ala.—Major J. W. Bushnell, chief engineer of the East & West Railroad extension of the Seaboard, is quoted as saying that contracts have been let for thirty-four miles of the thirty-nine miles of line to connect Coal City with Birmingham. Contractors who have already signed are L. R. Wright of Macon, Ga.; W. Z. Williams, formerly of Boston, now of Georgia; B. O. Watkins of Birmingham, John Blair MacAfee of Philadelphia, and Brewer & Jones of Baltimore and Birmingham.

Birmingham, Ala.—Dunn & Lallande Bros., contractors for the North Alabama Railroad, write to the Manufacturers' Record saying: "This is a branch of the Louisville & Nashville Railroad, leaving the main line about seven miles north of Birmingham and running west to the Warrior river. It is being built to develop new coal lands. The entire distance is through coal lands; the country is rough and the grading heavy. The work under contract, with branches, is about thirty-five miles in length."

Columbia, S. C.—The Charlotte, Monroe & Columbia Railroad Co. has filed a mortgage to secure \$70,000 of bonds for an extension from Hamburg to Jefferson, eleven miles. William Monteure is president and chief engineer, Raleigh, N. C.

Dallas, Texas.—Mr. L. S. Thorne, vice-president and general manager of the Texas & Pacific Railway, says that the company is not interested in and has no knowledge of any plan for a belt railroad at Alexandria, La.

Dallas, Texas.—It is reported that the Velasco, Brazos & Northern has bought control of the Dallas & New Mexico Railway, and will extend it to Dallas. Col. C. C. Waller and others of Houston are interested.

Denver, Col.—Mr. Charles S. Thomas writes to the Manufacturers' Record denying the report that he is interested in a company which will build a railroad to develop mining and other property in Mexico.

Florence, Ala.—J. L. Bell and associates of New York have been granted a franchise through Florence for the Alabama & Tennessee Railroad, to extend from Florence to Clifton, Tenn., sixty-five miles, with a branch fifteen miles long.

Granger, Texas.—It is reported that the Missouri, Kansas & Texas Railway, after building from Granger via Georgetown to Austin, will build the Trinity, Cameron & Western Railroad from Granger via Cameron, Hearne and Madisonville to Trinity, where it will connect with the Trinity & Colmesneil road, now owned by the M., K. & T. S. B. Fisher is chief engineer, St. Louis, Mo.

Guthrie, Okla.—The Oklahoma Central & St. Louis Railroad Co. has been chartered, with \$15,000,000 capital, to build a line 600 miles long. W. S. McCaul of Kansas City, Mo., obtained the charter, and the backers of the plan are said to be John W. Gates and others. The line will run from El Reno, Okla., via Guthrie to Joplin, Mo., thence to Jefferson City, Versailles and St. Louis. It connects with the Rock Island system. The United States Construction Co. has also been incorporated to build the line.

Haskell, Texas.—E. H. Tinsley, engineer for the proposed Texas & Mexican Railway, has, it is reported, received a letter from President C. C. Waller of Houston directing that the survey be completed immediately, preparatory to beginning grading from Haskell to Anson; also that rails for the line have been shipped.

Houston, Texas.—President J. Lane of the Cane Belt Railroad informs the Manufacturers' Record that the extension to Houston is not yet decided upon, but is under consideration.

Huntsville, Ala.—Capt. Milton Humes, Col. A. S. Fletcher and others are interested in a plan to build an air line railroad from Huntsville to connect with the Louisville & Nashville at Oneonta, Ala., fifty-four miles, to make a direct line to Birmingham.

Jackson, Miss.—The Gulf Shore Electric Railway Co. has been incorporated by W. W. Hungerford of Gulfport, George P. Hewes, Frank Taylor, James B. Cable and George P. Brandt to build an electric railway about twenty miles long from Henderson's Point, on the Bay of St. Louis, to Point Cadet at Biloxi, a distance of about twenty miles. It will go via Beauvoir.

Jackson, Miss.—The incorporation of the Natchez & Gulf Railroad, to extend from Natchez to Gulfport, about 200 miles, has been authorized. The line will run through Adams, Franklin, Pike, Marion, Pearl River and Harrison counties. A. G. Campbell, president of the Natchez National Bank, and J. W. Lambert, also of Natchez, are, respectively, president and vice-president. Col. W. W. Hungerford of Gulfport is chief engineer and general manager. W. H. Shields of Natchez is secretary, and S. H. Lowenberg, president of the Natchez Trust & Security Co., is treasurer.

Kansas City, Mo.—It is reported that the Kansas City Belt Railway Co. will build additional storage tracks.

Lexington, Ky.—Mr. J. R. Barr, general manager of the Lexington & Eastern Railway Co., denies the report that it is to build an extension.

Little Rock, Ark.—The Chickasawba Railroad Co., with \$75,000 capital, has been chartered to build a line ten miles long from Blytheville, Mississippi county, eastward to the Mississippi river at Barfield Point. It will be an extension of the Jonesboro, Lake City & Eastern. J. E. Jones of Jonesboro is president; Doswell Brown, vice-president; A. J. Kerfoot, general manager, and E. F. Brown, counsel and secretary.

Louisville, Ky.—It is reported that the Louisville & Nashville Railroad will make extensive improvements on the St. Louis division. R. Montfort is chief engineer, Louisville, Ky.

McComb, Miss.—A corps of engineers under Capt. J. J. White will survey a line immediately for the proposed railroad to Liberty.

McKinney, Texas.—A company has been organized to build the proposed McKinney & Blue Ridge Rapid Transit Railway, twelve miles long. J. L. Greer, Jesse Shain and others are interested.

Muscooke, I. T.—It is reported that the Atchison, Topeka & Santa Fe Railway will build the line which is proposed to run from Red Fork to Shawnee and Paul's Valley. J. Dun is chief engineer, Chicago, Ill.

Nashville, Tenn.—The Ocoee Valley Railroad Co. has been chartered to build a railroad from Wetmore to Copper Hill, both in Polk county; length of line about eighteen miles. This line, it is understood, is to shorten the route of the Atlanta, Knoxville & Northern. The incorporators are J. L. Lloyd, J. E. Lutz, W. S. Miller, J. B. Jones and A. A. Yeager. J. B. Newton is general manager of the A., K. & N. at Knoxville.

Oklahoma City, Okla.—President F. N. Finney of the Missouri, Kansas & Oklahoma Railroad, an extension of the M., K. & T., is quoted as saying that the construction contract will be awarded November 1.

Parkersburg, W. Va.—Preparations are being made, it is understood, to build a railroad from the Chesapeake & Ohio Railway near Covington into the Potts Creek valley. Ex-Governor W. A. MacCorkle, ex-Senator J. N. Camden and others are reported interested.

Pine Bluff, Ark.—The Pine Bluff & Western Railway has, it is stated, awarded to McArthur Bros. of St. Louis a contract for building twenty-four miles of line from Sheridan to Benton.

Seranton, Miss.—L. S. Anderson, who has purchased the electric-light plant, proposes to build an electric railway from Moss Point to Pascagoula. He has, it is stated, an option on the railroad connecting these points.

Sherman, Texas.—N. M. Lee, townsite agent of the Rock Island system, is quoted as saying that the extension from Shawnee to Milburn, Sherman and Dallas will be built immediately. Engineers are making the locations.

Sherman, Texas.—H. F. Farnham, who is reported to represent the Union Traction Co. of Cleveland, Ohio, says that it proposes to build an electric railway from Sherman to Dallas, Waxahatchie and Waco, and also to Corsicana. He has been conferring with W. E. Greiner, president of the Sherman Board of Trade, and others. Geo. T. Bishop of Cleveland, who is president of the Fort Worth & Dallas Interurban line, is reported to be interested. Survey is to begin October 20.

Sherman, Texas.—It is reported that the St. Louis & San Francisco Railroad proposes to build the Sherman & Lawton branch immediately after the Platter cut-off is com-

pleted. C. D. Purdon is chief engineer, St. Louis, Mo. It is further reported that the Frisco is about to push the proposed extension from Quanah, Texas, via Stamford and Abilene toward the Rio Grande.

St. Louis, Mo.—Condemnation suits have begun to carry out the plan for extending the Union Station. Work is expected to begin November 1. W. S. McChesney, Jr., is vice-president and general manager.

St. Louis, Mo.—The report that the St. Louis, Iron Mountain & Southern will survey a line from Cornling to Newport, Ark., via Reyno, Pocahontas, Black Rock and Lynn is officially denied.

Vicksburg, Miss.—It is reported that T. R. Foster and others are interested in a plan to build a railroad from Katzenmeyers Station, on the Yazoo & Mississippi Valley road, eight miles to Eagle Lake, in Issaquena county.

Vinita, I. T.—Surveyors for the Chicago, Rock Island & Pacific Railway are running a line from Tulsa to Eufaula. W. E. Dauchy is chief engineer, Chicago, Ill.

Weatherford, Texas.—The Weatherford, Mineral Wells & Northwestern Railroad, about twenty-two miles long, has been purchased by the Texas & Pacific Railway, and it is reported that the line will now be extended from Mineral Wells to Graham, about twenty-five miles, and thence northwest to Trinidad. Col. L. S. Thorne is first vice-president and general manager, Dallas, Texas.

Wheeling, W. Va.—Rights of way have been secured for an extension of the New Cumberland branch of the Pennsylvania Railroad from Chester, W. Va., to Monaca, Pa., about twenty miles. Thomas Rodd is chief engineer, Pittsburgh, Pa.

Wheeling, W. Va.—It is reported that Savage & Houston of Ashland have secured the contract to build three miles of the Norfolk & Western's Big Sandy extension from Cassville to Hurricane.

Street Railways.

Baltimore, Md.—Sperry, Jones & Co., bankers, of Baltimore, have obtained control of the Slaydon Street Railway lines at Monterey, Mexico, and have secured a franchise to build an electric railway. A company with \$1,500,000 capital is to be organized in New Jersey.

Chattanooga, Tenn.—It is announced that the Chattanooga Electric Railway Co. will build a line to Chickamauga Park.

Dallas, Texas.—A. K. Bonta is quoted as saying, concerning the recent deal for the consolidation of street railways in Dallas by the Stone & Webster syndicate of Boston, that the new company will spend \$600,000 in improving the lines.

Fairburn, Ga.—A committee of citizens has been appointed about securing an extension of the street-car line from College Park to Fairburn.

Morgantown, W. Va.—Mr. George H. Switzer, superintendent of construction of the Morgantown Electric & Traction Co., informs the Manufacturers' Record that the company is about to build four miles of electric railway.

Norfolk, Va.—The Norfolk Railway & Light Co. will, it is reported, build an extension.

Palestine, Texas.—Two applications for street-railway franchises have been referred to a committee of the city council. One is requested by Messrs. Hunter & Taylor of Greensboro, N. C., and the other by J. S. Tritle of St. Louis and R. V. Gray of Texarkana.

St. Louis, Mo.—The St. Louis County Street Railway Co. has accepted its franchise to build an electric railroad on the Olive street road to Creve Coeur Lake.

Machinery, Proposals and Supplies Wanted.

Manufacturers and others in need of machinery of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery needed we will make their wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. The MANUFACTURERS' RECORD has received during the week the following particulars as to machinery that is wanted.

Boiler and Engine.—See "Creamery."

Boiler and Engine.—See "Furniture Factory."

Bottling Plant.—Napoleonville Ice Co., Napoleonville, La., wants prices on bottling plant and machinery to manufacture carbonated drinks.

Brick Works.—C. A. Woolfolk, Virginia Beach, Va., wants full information regarding burning bricks, estimates on cost of kilns, etc.

Cannery.—Jas. M. Caldwell, Wedgefield, S. C., wants estimates on cannery (fruit and vegetables), fifteen to twenty dozen capacity per day.

Canning Equipment.—Chas. R. Colhoun, Shawsville, Va., wants estimates on complete plant for canning from 100 to 150 cans of tomatoes daily.

Canning Equipment.—Walters & Parrish, Shawsville, Va., want to communicate with makers of canning equipment.

Carbonated Drinks.—See "Bottling Plant."

Carousels.—J. B. Farmer, Box 235, Rocky Mount, N. C., wants to buy second-hand steam merry-go-round.

Cereal Mill.—Company will need 100-horsepower engine, roasters, cookers, etc., for cereal mill of daily output of 350 40-pound crates. Address J. C. Greg, president, Board of Trade, St. Joseph, Mo.

Chemical Supplies.—Crown Chemical Co., Memphis, Tenn., is in the market for extract of logwood, anilines, jet prussiate potash, blue vitriol, gum senegal, Epsom salts, petroleum, yellow and white, bottles, corks, etc.

Clayworking Machinery.—See "Crushers."

Computation Machine.—B. G. Rhyne & Co., Gastonia, N. C., want adding machine, also multiplying and subtracting machine, or both combined.

Cotton Gin.—J. J. Swain, Campobello, S. C., will want complete system of two 70-saw gins.

Crane (Traveling).—See "Foundry Equipment."

Creamery.—Dublin Dairy Co., Dublin, Texas, will want creamery equipment, including boiler and engine, by January 1.

Crushers.—Lester Clay Co., Valdosta, Ga., wants mills for grinding fuller's earth.

Dredging.—Engineer Office, U. S. A., No. 2, custom-house, Norfolk, Va., will open bids November 20 for dredging from Norfolk harbor to Albemarle sound, North Carolina.

Dredging.—Engineer Office, U. S. A., Mobile, Ala., will open bids November 12 for dredging on outer bar in Mobile harbor.

Engine.—See "Cereal Mill."

Engine.—See "Electric-light Plant."

Electric-light Plant.—Commonwealth Tanning Co., Hutton, Md., is in the market for second-hand electric-light plant of 200 to 250 candle-power.

Electric-light Plant.—Huntsville Railway, Light & Power Co., Huntsville, Ala., will be in market for dynamo and engine.

Excelsior Machinery.—Croatan Lumber Co., Wheaton, N. C., wants information regarding manufacture of excelsior, cost of machinery, etc.

Foundry Equipment.—Chattanooga Machinery Co., Chattanooga, Tenn., wants second-hand 30-foot five-ton hand-power traveling crane.

Furniture Factory.—Bassett Furniture Co., Bassett, Va., will need equipment for furniture factory, including engine and boiler, also mill supplies.

Ice Plant.—J. E. Burke & Co., Jonesboro, Ark., are prepared to let contract for 10-ton ice machine, two tons of product to be free ice and balance for refrigeration plant.

Railway Equipment.—Miller Supply Co., Huntington, W. Va., wants second-hand coal cars, standard gauge, etc.; quote dealers' prices.

Rice-mill Machinery.—Coleman-Wagner Hardware Co., 363 King street, Charleston, S. C., wants rice threshers, also power machine for grinding rice in the rough to flour.

Saw Machines.—R. W. Norris, Whitmarsh, Md., is in the market for folding saw machines.

Wire Laces.—Hyman Supply Co., New Berne, N. C., wants addresses of makers of the Kerr or other wire laces.

Woodworking Machinery.—See "Furniture Factory."

Woodworking Machinery.—Wilson Laundry Machinery Co., Columbia, Pa., will be in the market for power-mortising machine.

TRADE NOTES.

Mill Business.—For the better handling of its flour and attrition mill business throughout Georgia, Florida, Alabama and Mississippi, Sprout, Waldron & Co., Muncy, Pa., have established an office in Atlanta, Ga., in charge of Mr. John W. Taylor, for fifteen years identified with Southern milling trade.

He will pay particular attention to the cottonseed-ollcake end of the line, in addition to the feed and flour-mill trade, for the reason that Monarch attrition and Monarch cake crushers manufactured by Sprout, Waldron & Co. are particularly adapted to this trade, and are meeting with most extensive sales.

New Factory.—A new factory will soon facilitate the manufacture of Rhoads' leather belting. J. E. Rhoads & Sons are building this on a spacious site along the Baltimore & Ohio Railroad in Wilmington, Del. The main building will be 50x166 feet, three stories high, of substantial slow-burning brick construction. Besides this, there will be an engine-house and a tannery building. In its usual thorough way, the firm is making its factory one of the best in the country, and when finished it will greatly facilitate its business by reason of its up-to-date machinery and convenient arrangement for handling the belting in process of manufacture.

Many Contracts.—The Monitor Steam Generator Manufacturing Co., Landisville, Pa., has contracts to heat the municipal building in Jersey Shore, Pa.; the Bessemer Hotel and the U. B. Church in Steelton, Pa.; the United States Hotel, the Neversink Bank and the Evangelical Church in Reading, Pa.; the Border State Savings Bank, Hotel Joyce, Harmonie Club, St. Anthony's Orphan Asylum, Baltimore, Md. Large orders have come from Harrisburg, Carlisle, Philadelphia and Pittsburg, besides contracts already named. Monitor boilers have been set up in Minnesota, Illinois, Alabama, Michigan and other States. The company is putting in new machinery, and is arranging for such enlargement of plant as this rapidly-growing business requires. This firm is working on thirty-five large contracts.

Agent for Pacific Coast.—Norman B. Livermore & Co., 320 Sansome street, San Francisco, have been appointed sole agents for the Scaife and We-Fu-Go water-softening and purifying systems for the Pacific coast by Wm. B. Scaife & Sons Co., Pittsburg, Pa., sole manufacturer of these systems. Norman B. Livermore, who organized the firm of Norman B. Livermore & Co., is an engineering graduate of Cornell University, who, after a number of years in general practice, recently organized this company to conduct a general engineering business, and to act as sales agent for special lines on the Pacific coast. This company will give the subject of water purification its special attention. It is abundantly able to furnish clients with any details or information regarding either the Scaife or We-Fu-Go water-softening and purifying systems.

Cold-Water Painting.—The advantages possessed by the method known as "cold-water painting," especially for factories and large plants, are becoming more thoroughly recognized as time goes on. Firms manufacturing this paint, selling the apparatus and doing the work for large establishments are surely making rich returns on invested capital. The Southern Cold Water Paint Co., 218 Mabane street, Greensboro, N. C., is one such company, and one that is doing a rushing business. This firm has completed quite a number of large contracts recently, and has given thorough satisfaction; the Central Carolina Fair Association buildings and fences, covering thirty acres of ground, have just been finished, and work will be begun at once on contracts for the Greensboro Electric Co.'s plant, Greensboro White Oak Mills and seven other good fat contracts. This paint is fire-proof, brilliant white, cheap, dries quickly and increases the light to great advantage.

Westinghouse Equipment.—The Goodall Worsted Co. of Sanford, Maine, is building a large addition to its present works, and has found it necessary to considerably enlarge the power plant. A 400-kilowatt two-phase alternating-current generator, belted to an 800-horse-power Brown engine, was found necessary. The Illinois Car & Equipment Co. of Hegewisch, Ill., recently purchased a large amount of electrical apparatus, which will be used for the operation of wood-turning machinery. For this two 250-kilowatt and one 200-kilowatt two-phase alternator, together with a four-panel switchboard and two 100-horse-power, five 75-horse-power and one 50-horse-power induction motors are required. The Steel Storage & Elevator Construction Co. has adopted electric-power distribution for a large grain elevator which will be erected for the Canadian Pacific Railway at Fort William, Ontario. A direct-current generator and a number of direct-current motors will be used for the operation of this elevator. The Browning Engineering Co. of Cleveland, Ohio, recently purchased a number of railway-type crane motors, ranging in capacity from twenty-five to fifty horse-power. These electrical sales were

made by the Westinghouse Electric & Manufacturing Co., Pittsburg.

TRADE LITERATURE.

Locomotives.—Three books of "Records of Recent Construction," Nos. 34, 35 and 36, have been received from the Baldwin Locomotive Works, Philadelphia. These are printed in French and in English. From the standpoint of the engineer, the printer and the engraver little is left to be desired. Baldwin locomotives are of the finest construction, design and workmanship.

Horizontal Engines.—The "Class D" horizontal engine manufactured by Orr & Sem-bower, Inc., Reading, Pa., is effectively described and illustrated in a folder just received. This engine is remarkable chiefly for rigidity, strength, beauty of design and economy of floor space. The metal is carefully distributed; there is no useless weight. These machines have been found satisfactory.

Engine Specialties.—Payne engines look like good engines from the catalogue which we have received from the Payne Company, Inc., Elmira, N. Y. That's what this catalogue goes out for—to make Payne engines look as good as they really are; they are said to be very good, indeed. The catalogue accomplishes its object. This firm is a specialist on the manufacture of engines for isolated plants.

Barrows.—An illustrated catalogue of canal and garden barrows, wood-frame steel-tray dirt barrows, steel dirt barrows, foundry, ore, pig-iron, charging, ash, coal, coke and mining barrows, store and factory trucks has been received from the maker of these things, Syracuse Chilled Plow Co., Syracuse, N. Y. The catalogue is complete, well illustrated and adequately descriptive of this line of goods.

"Frozen Facts."—The Triumph Ice Machine Co., Cincinnati, has just issued an exceedingly attractive little book containing facts about the manufacture of ice and hints for the improvements of ice plants. The three graces of ice machinery—economy, endurance and earnings—are all said to be combined in the "Triumph" ice machine made by this firm. This booklet is filled with pointed paragraphs.

Fuel-Oil Equipments.—The National Oil Burner & Equipment Co., Carleton Building, St. Louis, is mailing to the trade price-list No. 3, descriptive of its boiler-furnace equipments. This literature contains illustrations of recent models of burners, etc., price-lists and information of value to users of fuel oil and fuel-oil equipment. With this folder is also sent one describing the "Branch" steam trap and one describing boiler furnaces.

Pumps.—A complete catalogue of pumps for every service has reached this office from the Goulds Manufacturing Co., 8 Oliver street, Seneca Falls, N. Y. This catalogue is well illustrated with the products of the Gould Company. Pumps efficient for every service and standing up under all kinds of use are the specialties of this firm. The catalogue contains 100 pages, is complete in every detail, well printed and handsomely illustrated.

Buffalo Forges.—Buffalo down-draft stationary and heating forges for industrial works are effectively described in a book just received, which in typographical appearance, good paper, clear cuts and fine arrangement is fully equal to any of the previous literature sent out by the maker of the above apparatus, the Buffalo Forge Co., Buffalo. This book shows a complete line of modern-designed and honestly-built stationary forges.

Steel Tanks.—Harry Bros. Company, 240 Pacific avenue, Dallas, Texas, manufacturer of a fine line of corrugated galvanized-steel cisterns and stock tanks, issues a small catalogue describing it. These tanks are made of best corrugated galvanized steel, with heavy galvanized angle steel rim at the top, and fitted with a nipple at the bottom for an outlet. The method employed by this company in the construction of these tanks is superior—the tanks are, too.

Cements and Specialties.—For fifteen years George Callahan & Co., 218 Front street, New York, have been manufacturing and handling the entire complete line of cements, specialties, oils and greases, mill, factory and foundry supplies, plumbers', tinners', roofers' hardware, stoves and furnace sundries of established merit, which is listed in a compact little book now being distributed. These goods have a reputation for reliable quality, and the firm one for prompt shipment.

Second-Hand Equipment.—Wickes Bros., machinery manufacturers and dealers in second-hand machinery, Saginaw, Mich., are issuing the October number of their monthly stock list, destroying previous quotations. This list merely mentions the various items held by the firm for sale. Wickes Bros. have a complete catalogue, and will be pleased to mail the same promptly upon request, from which full and complete information about any piece may be gathered.

Furniture.—A very pretty and attractive catalogue, illustrating a line of goods equally so, has been received from John Turnbull, Jr., & Co., 16, 18 and 20 West Baltimore street, Baltimore, Md. This line of home furnishings is very fine, and not high-priced, considering the beauty of finish and the fineness of detail. The catalogue will be mailed free upon request. Turnbull's house is doing an extensive business throughout the South with this and its extensive line of office furnishings.

Engines and Machinery.—Liddell Company, Charlotte, N. C., manufacturer of engines, boilers, saw-mills, woodworking machinery, cotton presses, cotton elevating, cleaning and ginning machinery, pulleys, shaftings, etc., is mailing to interested parties a catalogue of these specialties. This catalogue embraces only a portion of the full line of this enterprising firm. It has a general catalogue, twice the size of this, which does include the full line. This firm manufactures very extensively.

Fans.—The Davidson fan was put on the market in 1891, since which time hundreds have been sold for all manner of purposes—ventilating, heating, drying, etc. It is very extensively used in paper and pulp mills and textile plants in this country and abroad. The Davidson fan has been repeatedly tested in the best technical schools in competition with fans of nearly every manufacture. The Massachusetts Fan Co., Waltham, Mass., issues a very pretty catalogue illustrating and describing this fan.

Desks.—M. L. Himmel & Son, 403-405 East Baltimore street, Baltimore, said to be the largest manufacturers of desks, office fittings, bank furniture, etc., in the South, have issued an attractive catalogue illustrating and describing this extensive line. It will be mailed free upon request. To parties planning such purchases it will be a boon and an assistance in figuring. This firm is doing an enormous business throughout the South, and is working up a good strong trade abroad—Africa, Germany and England.

Steam Goods.—The Crane Company, Chicago, issues a very complete pocket catalogue at this time descriptive of steam goods, etc. This catalogue of nearly 500 pages will be of value to all users of steam goods, engine runners, etc. It is well illustrated and well gotten up. Standard pressure valves and cocks, fittings, extreme high pressure valves and fittings, medium pressure iron-gauge valves, brass globe valves, drainage fittings, steam and gas fitters' tools, etc., are listed. This will give some idea of the extensive line carried by this company.

Dixie Electro-Magnet.—There are always more or less metals, screws, bits of iron, bolts, nuts, etc., in cottonseed. These particles of metal do great damage in the linters, breaking saws and ribs, and still more in the bellers, if they get so far. The Dixie electro-magnet was introduced for the purpose of preventing this, and, judging from its already extensive use, is a complete success. Full information concerning this application has been received in a catalogue from the maker of this magnet, the Dixie Electro-Magnet Co., Memphis, which will be glad to send copies to interested cotton men.

Trolley Trip.—Crocker-Wheeler literature is always interesting. The attractive booklet, entitled "A Crocker-Wheeler Trolley Trip," and sent out from this firm's Ampere (N. J.) office, is on a par with all that has preceded. It is the illustrated description of the trolley route of the Detroit United Railway to its Rochester power plant over the Flint division of this line. The road has three terminals—Flint, Detroit and Romeo. The machinery used on this line is the product of the Crocker-Wheeler Company, manufacturer and electrical engineer. The book is prettily gotten up, nicely illustrated and interesting.

Edging Tools.—A little book describing in full a very complete line of edging tools has been received from the Wallace Supply Co., 56 Fifth avenue, Chicago. This is different from the usual trade catalogues; in fact, it is hardly a trade catalogue at all, except in

that it lists goods. It is attractively gotten up, well illustrated, concise, and very unusual. It also contains more than edging tools. Weatherproof cold-water paint, confidential price-lists, drills, leather aprons, hollow augers, tenon machines, spoke pointers, screw wrenches, vises and many other special machines are listed in it. These books are for free distribution.

Brick Machinery.—The Fernholz Brick Machinery Co., Old Manchester Road and Boyle avenue, St. Louis, Mo., issues a complete catalogue of brick machinery, which is being mailed at this time. The latest improvements have been embodied in Fernholz machinery, and during the years dry-press-brick machinery and brickyard supplies of this manufacture have been on the market, the firm avers that in spite of its guarantee no machine of its make has come back, and that further, it has never heard of a second-hand press of its manufacture for sale. These machines have been favorably known for a number of years.

Hardwood Floors.—Some hardwood floors never look well. Some look well at first, but soon give out. Others look well at first and continue to look well, because they are properly made, laid and finished. This kind of hardwood floor is made by J. M. Adams, 227 North Charles street, Baltimore. These floors are guaranteed against all defects that may arise from faulty material or workmanship. That guarantee is good. J. M. Adams has a very attractive little catalogue touching the question of what sort of a floor to lay, and how to cover it in a sensible manner, which he will mail to anyone interested. The title of this is "Hardwood Floors."

Tanite Wheels.—A bulletin has been received from the Tanite Company, Stroudsburg, Pa., which is of unusual interest. A fused mass of iron weighing five pounds one and one-quarter ounces is shown on the cover. This was formed below a Tanite emery wheel, and was the result of one-half hour's run of a 13½-inch wheel at 1630 revolutions a minute. In that half hour thirteen pounds two and one-half ounces of cast iron was ground off. During the same half hour an expert workman filing steadily only removed six and three-quarters ounces of cast iron. These wheels are meeting with extensive sales, and have been found very satisfactory.

Green Book.—Smith & Hemenway Company and the Utica Drop Forge & Tool Co., New York, unquestionably do a good piece of work when they go to the expense of issuing a catalogue like the "Green Book" of hardware specialties, whose fourth edition is now being distributed. This book is printed throughout on fine, light green paper, with good clear type, and is well arranged. It lists a complete line of hardware specialties, cutlery, nippers and plyers. It contains 150 thoroughly artistic pages, from which any selection of practically anything in the above lines may be easily and quickly made. It will attract, it will interest, and it will convince.

Road Rollers.—The Buffalo Pitts steam road roller, manufactured by Julian School & Co., 126 Liberty street, New York, illustrated and described in a leaflet from this firm, is in every way a superior machine. It is properly designed and constructed to perform every kind of work on old roads, plowing as well as picking up, and on new work, rolling the roadbed before the new metal is applied, compressing the different layers of road metal and smoothly compacting the top layer. It is also valuable for driving stone crushers and for handling heavy loads. This machine is heartily endorsed by United States government engineers on important work, for whom it is being largely used.

Cars.—A catalogue of cars, printed in English and in Spanish, has been received from the well-known manufacturer of cars, Kilbourne & Jacobs Manufacturing Co., Columbus, Ohio. This book is very well gotten up. It is well printed, well arranged, well illustrated and made of very fine paper. It illustrates particularly sugar-cane and plantation cars and light narrow-gauge railway cars. In addition to the supplies listed in this catalogue, this firm manufactures wheelbarrows, road scrapers, trucks, wheel scrapers, contractors' dump cars and carts, grading plows, steel ore and mine cars, steel shop pans and steel barrels. This firm is thoroughly known as an honest maker of an honest line of goods.

One Fare.—The Southern Pacific Railroad, passenger department, Houston, Texas, sends out an announcement to the effect that on account of the wonderful development of the country around New Orleans, and to accommodate the visiting bankers to the American

Bankers' Association, which meets in New Orleans from November 11 till the 13, it will sell a round-trip ticket to members of this association from New Orleans to surrounding points, good from November 11 till 25, at the rate of one fare. The developments in the country surrounding New Orleans are certainly of a nature to interest capitalists profoundly, and beyond doubt many will have cause to be glad of this move on the part of the Southern Pacific, facilitating their visiting these points.

Paint.—Paint adds so much to the appearance of a plant or mill that it is to be wondered at that all plants and mills are not freshly painted. Another source of wonder must strike home with force: Why is it that cheap and inferior paint is ever used? Nowhere is "cheap" spelled so plainly as in paint. Poor paint amounts to an absolute waste of money. The Muralo Company, West New Brighton, N. Y., is an extensive manufacturer of paint. This paint has long enjoyed a reputation for wearing qualities and for looking well under the most adverse conditions. This paint fulfills the requirements necessary for admission to the class of good paints. The Muralo Company is issuing a complete catalogue of its extensive line at this time, which is for anyone who will write for it.

Gas and Gasoline Engines.—It is well for a man or for a firm to have a specialty and to devote all energies, time and money to the development and perfection of this. Do one thing and do it well, rather than do many with a risk of not doing all well. The National Engine Co., Rockford, Ill., is doing one thing, and from the results, from the sales it is making and the satisfaction its gas and gasoline engines are giving, is doing that well. This firm is especially well suited to produce a strictly high-grade engine at a moderate price. Its factory is equipped throughout with the latest and most modern machine tools, made and especially adapted for this use. The latest catalogue of high-grade gas and gasoline engines is beautifully arranged and handsomely illustrated. It is intended for free distribution.

Interesting Pamphlet.—A pamphlet has been received from the Boston Belting Co., 256, 258 and 260 Devonshire street, Boston, maker of belting, hose of all kinds, packing, gaskets, valves, tubing, mats, dekle straps, rubber-covered rollers and mechanical rubber goods of every description, which contains facts and reading matter of some interest. This circular deals more particularly with "American Underwriters' fire hose. Most American mills are insured in firms under either the jurisdiction of the Associated Factory Mutual Insurance Companies or the National Fire Protection Association. The factories must have fire hose which fully meets the requirements of both the above combinations. The hose described in this pamphlet does meet fully these requirements, and is recommended and accepted by both of the above organizations.

Perforated Metals.—For thirty-odd years Chas. Mundt & Sons, 88-90 Walker street, New York, have made the manufacture of perforated metals an exclusive specialty. It has been their constant aim to be foremost in this line, and they have accumulated an assortment of sizes covering all the requirements of trade. The plant of this company is equipped with all modern machinery, and maintains its own machine shops for the construction of dies and other appliances required in this business. The latest catalogue of perforated metals issued by Chas. Mundt & Sons has just been received. It is complete in every detail. It contains illustrations of a great variety of the different dies, and from it any particular pattern may be selected as readily as from the dies themselves. It begins with the very first perforation patterns and ends with the largest.

Tanks.—That there is a demand for first-class work in every line, and that the firms which supply to a first-class demand first-class goods will be the strong and prosperous firms in the end, there can be no shadow of a doubt. Experience has proved this. The experience of W. E. Caldwell Company, Inc., Brook and D streets, Louisville, Ky., has demonstrated the effectiveness of this reasoning in one particular case. The business of this firm has grown from a small local trade in tanks to a general business in tanks, towers and tubs extending to every State and Territory in the Union, and beyond its borders into Canada, Cuba and South America. One of the causes of this success has been the continuous use of Louisiana cypress in the manufacture of these supplies. The latest catalogue of W. E. Caldwell & Co. is a complete one, dealing principally with large water tanks, in which it specializes.

Electric Locomotives.—In view of the fact that electric locomotives are being extensively used for haulage in industrial establishments, on plantations, short lines of railroad, etc., the book just from the press and being distributed by the Baldwin Locomotive Works, Philadelphia, and the Westinghouse Electric & Manufacturing Co., Pittsburgh, will be found replete with interest. This is intended to present the advantages of electricity as a motive power applied to locomotives for surface haulage, earlier developments having been mostly for mining service. Standard types and classes are enumerated, and a general description of their construction, both mechanical and electrical, is given, together with tables of weights and characteristics of each class. It is a complete illustrated description of electric locomotives and all parts entering their make-up.

Mailing Card.—Standard Machinery Co., Chattanooga, Tenn., sends in a remarkable mailing card. It says: "We're not telling it to everybody, but it was brought home to us again the other day that we had been misrepresenting our machinery. Tell you how it happened. We received an inquiry, then an order for wood splitters from Mr. R. O. Watson of Anniston, Ala. He ran the machine for a time before he discovered that it had been misrepresented; then he—well, here's what he said: 'The double wood splitter you furnished to me a few months ago was misrepresented. Your claim was that it would split fifteen cords of wood per day. I have split more than ten cords in five hours with two green negroes for assistants, and I can easily split from twenty to twenty-five cords per day on it. The machine greatly exceeds your claims and guarantee, and I am greatly pleased with it.'—R. O. Watson, Anniston, Ala."

Flour-Mill Machinery.—The Wolf Company, Chambersburg, Pa., is continually doing good things and calling the attention of this department of the Manufacturers' Record to them. The last and by far the best of these efforts comes in the shape of a catalogue of modern flour-milling machinery. It is this kind of a catalogue—the cover is attractive, and the book is opened to see if the title page is also—it is. A page or two more is turned, and the work of artists and writers of the first class comes to light. In nine cases out of ten this book will be examined from the front to the back cover. The "wolf" envelops the pages with a number of new and characteristic attitudes. On every page he is doing something. He is printed lighter than the type, and frequently extends over it. His graceful lines are in no wise destroyed or injured by this; he is still there. The introduction will be read. The book will sell goods. It is interesting.

Vulcanabeston.—The Manufacturers' Record is in receipt of a copy of a small but attractively gotten up catalogue of vulcanabeston, from H. W. Johns-Manville Company, 100 William street, New York. On page 3 of this book the importance of the best packing is clearly shown; on page 4 notes on the composition of this material are given. Prominent trunk lines use vulcanabeston packing rings on valve stems on both sides of heaviest express passenger engines, each stem traveling over 20,000,000 feet during the year without it being found necessary to screw down the follower. The rods are not scratched or worn, and are said to be smooth after this use. From this material the Johns-Manville Company manufactures successfully sheet packing for steam, gas, hot air, ammonia, acids, alkali plants, piston-rod packing, pressed rope rings and gaskets, molded gaskets, washers and rings for air-brake pumps, etc. This book will be mailed to any address upon request.

Commercial Register.—Hendricks' Commercial Register, for buyers and sellers, especially devoted to the interests of architects, mechanical engineers, contractors, electricians, railroads, iron, steel, hardware, mining, mill, quarrying, exporting and kindred industries, has been received from S. E. Hendricks Company, 76 Elm street, New York. This is said to be the most complete work of its kind ever issued. It contains 350,000 names and addresses, classified under 14,000 headings. The work gives the names and addresses of the manufacturers of everything made from iron, steel, brass, bronze, aluminum, clay, stone, marble, granite, slate, wood, fiber, asphalt, asbestos, etc. It enumerates every kind of trade, machinery and tool employed in fashioning the above materials into the finished product, not omitting the professions that specify, the dealer who handles, nor the manufacturers and contractors, who are consumers. The work contains 1200 pages, is bound in cloth, and will be forwarded anywhere, express prepaid, on receipt of \$6.

St. Louis & San Francisco Railroad Company.

SIXTH ANNUAL REPORT—FOR THE FISCAL YEAR ENDED JUNE 30, 1902.

The following report of the operations of lines constituting the St. Louis & San Francisco Railroad System for the fiscal year ended June 30, 1902, is respectfully submitted:

MILEAGE OPERATED.

	Main Track.	Side Track and Switches.
St. Louis & San Francisco Railroad Main Line and Branches.....	2,007.60	369.35
Kansas City, Fort Scott & Memphis Ry. Main Line and Branches.....	854.70	300.40
Kansas City, Memphis & Birmingham Railroad Main Line and Branches.....	285.66	76.46
Paris & Great Northern Railroad.....	16.94	5.62
St. Louis, San Francisco & Texas Railway.....	15.84	7.51
Red River, Texas & Southern Railway.....	87.34	12.87
Fort Worth & Rio Grande Railway.....	146.16	14.79
Total at June 30, 1902.....	3,414.24	787.00
Total at June 30, 1901.....	3,187.34	669.59
Increase.....	226.90	117.41

The Company also had in operation at June 30, 1902, 25.66 miles of second main track, making a total mileage of all tracks of 4236.91 miles.

The increase in mileage operated at June 30, 1902, over preceding year consisted of:

	Miles.	Miles.
St. Louis & San Francisco Railroad:		
Blackwell, O. T., to Choctaw Northern Railway Crossing, O. T.....	84.33	
Oklahoma City, O. T., to Chickasha, I. T.....	39.60	123.93
Kansas City, Fort Scott & Memphis Railway:		
Miami, I. T., to Afton, I. T.....	13.09	
Jacques Junction Extension, Kan.....	1.06	14.15
St. Louis, San Francisco & Texas Railway:		
Sherman Union Station to connection with Red River, Texas & Southern Railway, Texas.....		1.48
Red River, Texas & Southern Railway:		
Sherman, Texas, to Fort Worth, Texas.....		87.34
Total.....		226.90

Of the total of 3414.24 miles operated at June 30, 1902, 3388.21 miles are owned by the Company, and 126.03 miles are operated under agreements with other companies.

The total average main track mileage operated during the fiscal year was 3252.35 miles, as against 2922.55 miles for the preceding year.

The Company also owns jointly with the Atchison, Topeka & Santa Fe Railway Company the Kansas Southwestern Railway, extending from Arkansas City, Kan., to Anthony, Kan., a distance of 59.35 miles, but that road is operated independently, and therefore not included in above mileage.

INCOME ACCOUNT.

The following is a condensed statement of the Income Account of the System for the year ended June 30, 1902, and a comparison with that of the preceding year. (See Table "B.")

The following shows the various classes of earnings, together with the increase in each:

	1902.	1901.	Increase.	P. C. of Increase.
Gross Earnings:				
Freight.....	\$15,006,243 15	\$13,920,672 43	\$1,085,570 72	12.11
Passenger.....	4,253,757 73	3,752,994 92	500,762 81	13.34
Mail.....	471,751 04	462,478 26	9,272 78	02.01
Express.....	526,320 72	459,373 92	66,946 80	14.57
Miscellaneous.....	762,809 85	728,759 47	34,050 38	04.67
Total.....	\$21,020,882 49	\$19,324,279 00	\$2,296,603 49	11.88

The percentage of increase in the average mileage operated was 11.3 per cent., while the percentage of increase in gross earnings was 11.8 per cent. The gross earnings per mile of road operated in 1902 was \$647.77, and in 1901 \$661.45; increase in 1902, \$36.32.

The following is a comparison of the different Operating Expense Accounts and showing the increase in each, together with the percentage of same:

	1902.	1901.	Increase.	P. C. of Increase.
Operating Expenses:				
Maintenance of Road and Structures.....	\$2,978,547 14	\$2,624,416 02	\$354,131 12	13.51
Maintenance of Equipment.....	2,212,306 07	2,065,404 31	146,901 76	10.31
Transportation and Traffic.....	7,619,347 03	6,180,103 81	1,439,243 22	23.27
General Expenses.....	631,970 36	599,962 98	32,007 38	05.33
Total.....	\$13,422,170 60	\$11,469,887 12	\$2,062,583 48	18.08

The Net Earnings increased \$234,020.01, or 2.96 per cent.

The following are the percentages of the different Operating Expense Accounts to Earnings and comparison with previous year:

	1902.	1901.
	Per Cent.	Per Cent.
Maintenance of Road and Structures.....	13.78	13.58
Maintenance of Equipment.....	10.22	10.38
Transportation and Traffic.....	35.38	31.98
General Expenses.....	2.92	3.10
Total.....	62.31	59.04

The following are the Operating Expenses per mile of road and comparison with previous year:

	1902.	1901.
	\$15 91	\$897 90
Maintenance of Road and Structures.....	680 22	686 11
Maintenance of Equipment.....	2,351 94	2,114 41
Transportation and Traffic.....	194 31	265 27
General Expenses.....		
Total.....	\$4,142 38	\$3,903 09

FINANCIAL.

CAPITAL STOCK.

There has been no change during this fiscal year in the amount of the Capital Stock of the Company authorized or issued.

On June 15, 1901, the authorized Capital Stock of the Company was increased to \$100,000,000.

The following is the amount of each class authorized and issued at June 30, 1902:

	Authorized.	Issued.
First Preferred.....	\$5,000,000	\$5,000,000
Second Preferred.....	31,000,000	16,000,000
Common.....	64,000,000	29,000,000
Totals.....	\$100,000,000	\$50,000,000

Of the total Capital Stock issued there remained in the treasury of the Company at June 30, 1902, \$1,698,795.50, and consists of:

First Preferred.....	\$6,447 10
Second Preferred.....	53 00
Common.....	1,692,295 40

Treasury holdings of Second Preferred Stock amounting to 17,230 shares were sold during the year, and the proceeds were used to reimburse the treasury for capital expenditures. The discount on the sale of this stock was charged to Profit and Loss Account.

CHANGES IN BONDED DEBT.

The net increase in this Company's bonded debt during the year was \$12,537,800, and is made up as follows:

\$5,276,900 in Refunding 4s, issued for Refunding purposes in excess of Underlying Bonds redeemed or exchanged.	
4,650,000 in Refunding 4s, issued in exchange for St. Louis, Oklahoma & Southern Railway first 4 per cent. bonds (cost of road, Sapulpa to Sherman).	
1,369,900 in Refunding 4s, issued in respect of \$3,044,200 Fort Worth & Rio Grande Railway Company's stock purchased.	
241,000 in Refunding 4s, issued in exchange for a like amount of Kansas City Division 4 per cent. bonds, formerly held in trust.	

BONDS IN TREASURY.

The \$241,000 of Kansas City Division 4 Per Cent. Bonds which remained in trust under agreement of June 1, 1900, with the United States Mortgage & Trust Company were, during the fiscal year, by mutual consent, withdrawn from the Trust Company and exchanged for a like amount of refunding 4 Per Cent. Bonds, and the latter are to be used to reimburse the treasury for construction and improvement and new equipment expenditures.

The treasury holdings of Consolidated Mortgage 4 Per Cent. Bonds at the close of the fiscal year ended June 30, 1901, amounted to \$1,443,000 and due bill for \$125. These bonds were exchanged during the year for a like amount of Refunding Mortgage 4 Per Cent. Bonds, the Consolidated Mortgage Bonds being placed under the Refunding Mortgage.

The increase during the fiscal year in the treasury holdings of bonds was \$2,101,500, par value, and is made up as follows:

\$1,369,900 Refunding 4 Per Cent. Bonds issued for \$3,044,200 Fort Worth & Rio Grande Railway Company stock, purchased and placed under the Refunding Mortgage.	
241,000 Refunding 4 Per Cent. Bonds issued for a like amount of Kansas City Division 4 Per Cent. Bonds heretofore referred to; placed under the Refunding Mortgage.	
2,500 Refunding 4 Per Cent. Bonds issued for \$2500 Northwestern Division 4 Per Cent. Bonds; placed under the Refunding Mortgage.	
600 Refunding 4 Per Cent. Bonds issued for \$600 of "A" Bonds; placed under the Refunding Mortgage.	
5,000 Refunding 4 Per Cent. Bonds issued for Consolidated Mortgage 4 Per Cent. Bonds, originally received from the Reorganization Committee, and now placed under the Refunding Mortgage.	
29,000 Refunding 4 Per Cent. Bonds issued for a like amount of Underlying Bonds, redeemed and cancelled, and for which \$26,250 of Consolidated Mortgage 4 Per Cent. Bonds were issued and placed under the Refunding Mortgage.	
1,000 Trust Mortgage 6 Per Cent. Bond redeemed, and for which a Refunding 4 Per Cent. Bond will be issued.	
452,500 Kansas City, Fort Scott & Memphis Railway Company Refunding 4 Per Cent. Bonds, \$452,000 of which were received in payment of expenditures for improvements as per statement, page 24, and \$500 in due bill for a like amount of Kansas City, Memphis & Birmingham Income Bonds purchased and placed under Kansas City, Fort Scott & Memphis Railway Company Refunding Mortgage.	

At the close of the fiscal year ended June 30, 1902, the Company held in its treasury as a current asset \$3,544,000, par value, in bonds, and \$625 in scrip, and in addition is entitled to receive from the Trustee \$1,000,000 of Refunding Bonds on account of expenditures during the year for improvements and new equipment.

ADVANCES.

Advances had been made at June 30, 1902, to roads under construction and for surveys as follows:

Red River, Texas & Southern Railway Company.....	\$1,161,198 00
Taylor City Belt Railway Company (World's Fair connection).....	22,413 97
Central Belt Railway Company (St. Louis).....	11,112 66
Miscellaneous Surveys, etc.....	28,079 46
Total.....	\$1,222,804 09

The Company will be reimbursed for these advances.

As the Company has not as yet deemed it best to sell any of its treasury holdings of Refunding Bonds, it borrowed in June, 1902, \$840,000 for part of the advances made as above for construction purposes. This accounts for the item of Notes Payable on the balance sheet.

BLAIR & CO. EQUIPMENT TRUST NOTES.

On December 1, 1901, an agreement was made with Blair & Co. for the purchase of additional equipment, whereby this Company issued equipment notes dated December 1, 1901, to the amount of \$1,310,000, bearing interest at the rate of 4 per cent. per annum, and payable in twenty semi-annual instalments of \$65,000 on each first day of June and \$65,000 on each first day of December, all redeemable at par and accrued interest on any interest-payment date.

One note of \$65,000, which matured June 1, 1902, was paid, and the remainder appears in the balance sheet as a liability in offset to the value of the equipment.

For description and the total cost of the Equipment purchased see Statement E, pamphlet report.

REFUNDING BONDS.

For the purpose of unifying the Company's bonded debt and to provide funds for improvements and new equipment and for the enlargement of the system, the Company executed a Mortgage dated June 20, 1901, to secure an issue of Refunding Mortgage 4 Per Cent. Gold Bonds to the amount of \$85,000,000, and which was referred to in detail on page 9 of last annual report.

During this fiscal year \$46,518,000 of refunding bonds were executed, and \$43,895,000 were issued.

\$2,923,000 Refunding Bonds executed are deposited uncanceled with the Morton Trust Company, and are set apart in accordance with the provisions of the Mortgage to take up an equal amount of the First Mortgage Bonds of the Fort Worth & Rio Grande Railway Company.

The amounts issued were disposed of as follows:

\$40,004,000 were sold, and with the proceeds \$34,327,100 of Underlying Lien Bonds were redeemed and placed under the Refunding Mortgage without impairment of lien, unless and until cancelled, as provided in the mortgage.	
1,369,900 were used to reimburse the treasury for the cost of \$3,044,200 of Fort Worth & Rio Grande Railway Company Stock, and remain in the treasury of the Company.	
1,721,100 were exchanged for bonds held in the treasury of the Company.	
200,000 were exchanged for a like amount of Northwestern Division Bonds, and are deposited with the Continental Trust Company of New York in trust to pay for expenditures for improvements on or new equipment for the Northwestern Division, Wichita to Ellsworth, Kan.	

See Table K (pamphlet report), showing the Underlying Bonds refunded and the amount of all classes of bonds which were outstanding at June 30, 1902.

The annual saving in interest by reason of the refunding of the Underlying Bonds up to this time amounts to \$39,902.

The amounts paid for premiums on Underlying Bonds redeemed, and for discount and commission on sale of the Refunding Bonds, will be charged to Profit and Loss Account in annual amounts. The amount so charged for this fiscal year was \$200,000. The remainder (\$5,677,509.99) is shown in balance sheet as an open account.

KANSAS CITY, FORT SCOTT & MEMPHIS RAILWAY CO. REFUNDING BONDS.

As outlined in last year's report, pages 12 and 13, the Kansas City, Fort Scott & Memphis Railway Company executed its Refunding Mortgage, dated August 23, 1901, authorizing an issue of \$60,000,000 of Refunding 35-Year 4 Per Cent. Gold Bonds, and under date of August 23, 1901, this Company leased the Kansas City, Fort Scott & Memphis Railway System, and by terms of lease agreed to guarantee the Kansas City, Fort Scott & Memphis Railway Refunding Bonds, both principal and interest, then issued, or that might thereafter be issued with the consent of this Company, also to guarantee the payment of the fixed charges of the Kansas City, Fort Scott & Memphis Railway Company and dividends of 4 per cent. per annum, payable quarterly, on \$13,510,000 of preferred stock of that Company.

Of the \$60,000,000 of Refunding Bonds authorized, \$11,650,000 were then issued, and, with \$13,510,000 of preferred and \$15,000,000 of common stock of the Kansas City, Fort Scott & Memphis Railway Company, were used in paying for the property of the Kansas City, Fort Scott & Memphis Railroad Company and for the line of the Kansas City, Fort Scott & Memphis Railway Company of Oklahoma, between Miami and Afton, I. T., 13.09 miles, and for the Jacques Junction Extension in Kansas, 1.06 miles.

By provision in the Mortgage, bonds are reserved as follows:

\$34,025,770 to take up Underlying Bonds of the system and for refunding purposes.	
5,000,000 for acquisition of additional tracks, terminals or improvements upon the then existing system lines and at a rate not exceeding \$900,000 of bonds in any fiscal year.	
9,324,230 for the construction or acquisition of terminals, branches or extensions at rate not exceeding \$22,500 par value of bonds per mile.	
The total amount of Kansas City, Fort Scott & Memphis Railway Company Refunding Bonds issued at June 30, 1902, was \$12,507,500, of which \$11,650,000 was for payment of property as above.	

\$406,500 for payment of \$399,500 of Kansas City, Memphis & Birmingham Railroad Company Income Bonds, purchased and placed under the Refunding Mortgage, and for \$6000 of Short Creek & Joplin 1st Mortgage 7 Per Cent. Bonds redeemed through operation of sinking fund and cancelled. \$405,000 of these refunding bonds were sold.

\$52,000 for payment of Expenditures for Construction Improvements made during the fiscal year. These bonds remained in the treasury of the Company at June 30, 1902.

The Company is also entitled to receive additional Kansas City, Fort Scott & Memphis Railway Refunding Bonds from the Trustee on account of \$110,000 of Ozark Equipment Company 1st Mortgage 5 Per Cent. Bonds and \$33,000 of Fort Scott Equipment Company 1st Mortgage 6 Per Cent. Bonds, which were retired during the year through the operation of Sinking Funds.

KANSAS CITY, MEMPHIS & BIRMINGHAM INCOME BONDS.

On February 1, 1902, an agreement was made between the Kansas City, Fort Scott & Memphis Railway Company and the Old Colony Trust Company of Boston whereby the Railway Company offered, through the Trust Company, to the holders of Kansas City, Memphis & Birmingham Railroad Company Income Bonds to pay the interest on said Income Bonds semi-annually by fixed coupons, commencing with March 1, 1902, on the holders giving an option for ten years from September 1, 1902, to purchase assenting Income Bonds on any interest day, on sixty days' notice, at 95.

The total amount of Income Bonds issued is \$6,322,730, and the holders of \$5,557,000 have so far assented to the proposition. This Company has agreed to advance on the 28th day of February and 31st day of August in each year the amount of the fixed coupons of the assenting bonds.

The interest on the Income Bonds for the fiscal year ended June 30, 1901, amount \$316,139, was paid in September of this fiscal year, and as the Kansas City, Memphis & Birmingham Railroad Company did not include the same in its accounts of last year, it has now been accordingly charged to Profit and Loss Account. The interest for the fiscal year to June 30, 1902, is included in the Income Account for the year.

NEW MILEAGE.

FORT WORTH & RIO GRANDE RAILWAY COMPANY.

As stated in last annual report, this Company acquired the capital stock of the Fort Worth & Rio Grande Railway Company, and under contract with the International Equipment Company, the Fort Worth & Rio Grande Railway Company is extending its line southward from Brownwood, Texas, to Brady, a distance of about forty-seven miles. It is expected that the extension under contract will be completed early in 1903.

RED RIVER, TEXAS & SOUTHERN RAILWAY.

This line, which was referred to in last annual report, was completed and placed in operation between Sherman and Fort Worth on March 23, 1902.

An agreement was entered into with the St. Louis Southwestern Railway Company of Texas whereby the Red River, Texas & Southern Railway Company acquired the joint use of that Company's tracks between Carrollton and its own line at Fort Worth.

The mileage between Sherman and Fort Worth is made up of—

	Miles.
Red River, Texas & Southern Railway, Sherman to Carrollton.....	52.98
St. Louis Southwestern Railway of Texas, Carrollton to connection with the Red River, Texas & Southern Railway Belt at Fort Worth.....	29.90
Red River, Texas & Southern Railway Belt Line, connecting the tracks of the St. Louis Southwestern Railway Co. of Texas with the Fort Worth & Rio Grande Ry.....	4.56
Total.....	87.34

Extensive terminal yards were built at Fort Worth in connection with the Belt Line.

To connect the line of the Red River, Texas & Southern Railway Company with that of the St. Louis, San Francisco & Texas Railway Company 1.48 miles of new track were built by the latter company.

BLACKWELL, ENID & SOUTHWESTERN RAILWAY.

On February 27, 1902, an agreement was entered into with the Construction Company building the Blackwell, Enid & Southwestern Railway to purchase, at completion, that road, then under construction, extending in a southwesterly direction from Blackwell, Okla., to Vernon, Texas, a distance approximately of 251 miles, together with its equipment.

The price agreed to be paid for the completed road, together with equipment costing \$200 per mile, is \$18,000 per mile of main track in refunding mortgage bonds of this Company at par.

On the day on which the purchasing agreement was entered into a temporary lease was also executed whereby the Construction Company turned over to this Company on March 1, 1902, 84.33 miles of the completed line between Blackwell, Okla., and the Choctaw Northern Railway crossing, and that section has since been operated as a part of this System.

OKLAHOMA CITY & WESTERN RAILROAD.

On April 4, 1902, an agreement was entered into with the St. Louis Trust Company to purchase the Oklahoma City & Western Railroad on its completion, between Oklahoma City, O. T., and Quanah, Texas, a distance of approximately 184 miles.

The price agreed upon is \$17,000 per mile of completed road, together with such amount as shall have been expended for equipment.

Pending the completion of the entire line, an operating agreement was entered into on May 27, 1902, whereby the contractors turned over to this Company on June 22, 1902, that portion of the line then completed between Oklahoma City and Chickasha, I. T., 39.60 miles, and from that date it has been operated as a part of this System.

BIRMINGHAM BELT RAILROAD COMPANY.

This Company bought, as of June 3, 1902, the property of the Birmingham Belt Railroad Company, consisting of 15.81 miles of terminal tracks in the city of Birmingham, Ala., together with its equipment; also valuable real estate, franchise and buildings in the city of Birmingham.

The tracks of the Birmingham Belt Railroad are used to interchange freight between the various railroads centering at Birmingham, Ala., and the different industries along its tracks. By acquiring this property the System has greatly improved and strengthened its position in the city of Birmingham, Ala., and tributary territory.

TAYLOR CITY BELT RAILWAY.

About two miles of track are being built by the Taylor City Belt Railway Company to connect the tracks of this Company and those of the Missouri Pacific Railway Company with the World's Fair site of the Louisiana Purchase Exposition Company in Forest Park, St. Louis. The capital stock of the Taylor City Belt Railway is owned one-half by each of the two companies interested. The tracks will be completed and ready for use in September, 1902.

THE KANSAS SOUTHWESTERN RAILWAY COMPANY.

This Company purchased from the Atchison, Topeka & Santa Fe Railway Company one-half interest in the Kansas Southwestern Railway, extending from Arkansas City to Anthony, Kan., a distance of 59.35 miles. Since October 26, 1901, this road has been operated independently for account of the two companies owning it. It has no floating or bonded debt.

EQUIPMENT.

The increase in the expenditures for maintenance of the equipment of the System for the year was \$206,901.76, or 10.31 per cent., over the preceding year, and the past policy of the Company of maintaining its equipment to the highest possible degree of efficiency has been continued.

A comparison with the preceding year of the amounts expended per locomotive and car for repairs and renewals is as follows:

	1902.	1901.
Repairs and Renewals per Locomotive.....	\$1,750.96	\$1,499.34
Repairs and Renewals per Passenger Car.....	804.21	802.53
Repairs and Renewals per Freight Car.....	53.53	60.13

The decrease in the cost of repairs per freight car during the current year is accounted for by the recent purchase of a large number of new freight cars.

All equipment destroyed or sold during the year has been charged against operating expenses at book value.

The following new equipment was added during the fiscal year:

	Purchased Direct.	Purchased through Blair & Co.	Purchased through the Ozark Equip. Co.	Rec'd with Oklahoma City & Western Ry.	Total.
Locomotives.....	10	5	36	...	51
Coaches.....	1	1	1	...	3
Chair Cars.....	6	1	1	...	8
Baggage Cars.....	...	...	2	...	2
Baggage, Mail and Express.....	...	...	1	...	1
Baggage and Express.....	5	4	...	...	9
Caboose.....	...	15	...	...	15
Box Cars.....	114	500	...	187	801
Furniture Cars.....	...	150	...	...	150
Coal Cars.....	205	1,081	...	...	1,286
Ballast Cars.....	...	100	...	...	100
Flat Cars.....	...	50	...	...	50
Steam Wreckers.....	1	...	...	...	1
Steam Shovels.....	1	...	...	...	1

The freight-car equipment at the end of the fiscal year consisted of 16,667 cars of a tonnage capacity of 421,180 tons, as compared with 14,719 cars of a tonnage capacity of 345,977 tons at the end of the preceding year, an increase of 13 per cent. in number of cars and 21 per cent. in tonnage capacity over the preceding year.

The average capacity per freight car for the fiscal year was 25.27 tons, as against 23.51 tons for preceding year, an increase of 1.76 tons, or 7.4 per cent.

The number of engines and their tractive power at the end of the fiscal year was 510 engines; tractive power on level track, 1,148,350 tons, as against, for the preceding year, 464 engines, tractive power 982,212 tons, being an increase of 9.9 per cent. in number of engines and 16.9 per cent. in tractive power.

The average miles of road per engine for the fiscal year were 6.37, as against 6.29 for the preceding year. The average miles of road per passenger-train car were 9.50, as against 9.48 for the preceding year. The average number of freight cars per operated mile was 5.12 cars, as against 5.04 cars for the preceding year.

For detailed description of Equipment owned see Table R, page 58 of pamphlet report.

TRAFFIC.

On page 64, Table W, of pamphlet report, is given a statement in condensed form of freight and passenger statistics for the six years ended June 30, 1902. The figures for the year ended June 30, 1902, include those of the entire System, but the previous years' figures are those of the St. Louis & San Francisco Railroad Company as then constituted.

FREIGHT.

There was an increase in the tonnage carried during the fiscal year of 270,389 tons, equal to 3 per cent., and an increase in the ton mileage of 97,352,116, equal to 6 per cent. The average tonnage per train increased 5.51 miles, equal to 3 per cent.

The average rate per ton increased 15.82 cents, and the average rate per ton-mile .059 of a cent over the preceding year. The increase in the rates per ton and per ton-mile was obtained by reason of the increase in the percentage of tonnage of the higher class shipments. (See Statement Q, page 57 of pamphlet report, giving classification of tonnage.)

There was an increase of .39 of a ton in the average load per loaded car of commercial freight, but the average train load of commercial freight decreased 13.32 tons, equal to 6 per cent., as compared with the preceding year. The lighter business and trains on the newly-acquired mileage, and the having to haul water during the drought season in the fall and early winter months, account for the decrease in the average train load.

The ton-mileage density per mile of road for the year was 503,499 tons, as against 526,953 for preceding year.

The increase in freight-train mileage of the System for the year was 1,068,948 miles, equal to 13.9 per cent. The mileage of double-header trains is included as single trains, but the mileage of both engines is included in the statement of engine mileage.

PASSENGER.

There was a decrease in the System passengers carried during the fiscal year of 62,625, equal to 1.67 per cent., but an increase in the number of passengers carried one mile of 14,749,540, equal to 8.55 per cent. The increase in the average distance each passenger was carried was 4.79 miles, an increase of 16.51 per cent. over the preceding year.

The average rate per passenger increased fifteen cents over the average rate of the preceding year, and the average rate per passenger per mile increased .0096 of a cent, equal to 4.35 per cent. The decrease in the suburban and interurban business, caused by competition of electric lines, partly accounts for the decrease of the number of passengers carried, and also accounts for the increase in the average distance each passenger was carried, as well as the increase in rates per passenger and per passenger mile.

The number of through passengers decreased 4.6 per cent., and the through-passenger mileage increased 6.6 per cent. The number of local passengers decreased 1.4 per cent., and the local-passenger mileage increased 9.6 per cent.

The passenger-train mileage increased 660,457 miles, or 14 per cent., and the earnings per passenger-train mile increased 9 mills.

PHYSICAL CONDITION.

There have been liberal expenditures made for additions to the property and improvements in its physical condition during the year.

The increase in the expenditures on account of maintenance of way and structures for the year was \$354,431.12, or 13.51 per cent., over those of the preceding year.

The expenses of maintenance of road and structures per mile for 1902 were \$915.91, as against \$897.90 for the preceding year.

34,000 tons of new 55-pound steel rails were ordered for this fiscal year, but owing to the inability of the mills to deliver, only 15,563 tons were laid during the year, as against 25,000 tons laid during the preceding year.

There were 1,273,881 new cross-ties and 528 sets of switch ties put in track during the year, as against 1,204,768 cross-ties and 313 sets of switch ties for the previous year.

The total cost of all renewals of steel rails, cross-ties, steel bridging and buildings was charged to operating expenses.

During the year 117.41 miles of passing and side tracks were built, and the cost of same was charged to Capital Account.

361.50 miles of tracks were ballasted at a total cost of \$481,534.34, of which \$56,603.94 was charged to operating expenses and \$424,930.40 to Capital Account.

A new elevator with capacity of 360,000 bushels was built at Rosedale, Kan., during the year, and an addition of two storage tanks was made to the old elevator at that point, increasing its capacity to 360,000 bushels, at a total cost, including ground, of \$135,057.81. An additional storage tank for the old elevator and two additional storage tanks for the new elevator are now in process of construction, and when completed will bring up the combined capacity of the two elevators to 1,000,000 bushels.

Additional real estate for terminals was purchased during the year at a cost of \$352,343.33. For details in brief of the Capital Expenditures see Tables E and E-1, pages 33 and 34 of pamphlet report.

LAND DEPARTMENT.

Net receipts of the Land Department of the System were:

St. Louis & San Francisco Railroad Company Net Land Receipts.....	\$19,460.88
Kansas City, Fort Scott & Memphis Railway Company Net Land Receipts.....	13,304.68
Total.....	\$32,765.56

GENERAL.

Attention is called to Statements T and U on page 62 (of pamphlet report), which give the capital stock, bonded indebtedness and interest charge per mile, also the gross earnings, operating expenses and net earnings per mile and recapitulation of the condensed income account, all for the period of six years. It will be seen that the figures for the year 1902 are those of the System, while those for 1901 and prior are the figures of the St. Louis & San Francisco Railroad Company proper as it then existed.

During the past fiscal year regular quarterly dividends were declared and paid on the First and Second Preferred Stocks of the Company, and the amounts were charged to Income Account.

The guaranteed dividends on the Kansas City, Fort Scott & Memphis Railway Company Preferred Stock Trust Certificates paid during the fiscal year appear in Income Account under the heading of "Rental of Leased Lines."

The surplus after the payment of dividends amounted to \$1,472,197.54, and was carried to Profit and Loss Account.

For all charges and credits to Profit and Loss Account during the year to June 30, 1902, see Statement A.

On pages 65 to 68 of pamphlet report will be found statements of the Trustees of various Sinking Funds, wherein are shown the amounts of the live bonds and cash in the respective funds.

It is expected that the additional mileage which is in process of construction will add to the earning power of the lines already built, and at the same time be self-supporting.

The conditions this year in most of the territory tributary to the Company's lines are favorable for good crop, so that a continuation of heavy traffic for another year seems likely.

As has been the custom in the past, the Board directed Mr. Stephen Little to make an examination of the accounts of the Company for the past fiscal year, and his certificate appears on page 26 (of pamphlet report).

I acknowledge with pleasure the fidelity and efficiency of the officers and employees in the performance of their duties during the year.

B. F. YOAKUM,
President.

A.—GENERAL PROFIT AND LOSS ACCOUNT, ENTIRE SYSTEM, AND ADJUSTMENTS THEREIN, JUNE 30, 1901, TO JUNE 30, 1902.

By—	Dr.	Cr.
Balance at credit, June 30, 1901.....		\$1,910,668 87
Balance at credit, June 30, 1901, of Leased and Auxiliary Companies:		
The K. C., Ft. S. & M. Ry. Co.....		\$623,832 10
K. C., M. & B. R. Co.....		648,046 42
W. & R. G. Ry. Co.....		146,288 64
Surplus for the year ended June 30, 1902, as per Income Account.....		1,418,267 16
Miscellaneous Accounts closed out.....		1,472,197 54
Overprovision for Taxes for fiscal year 1901, now credited back.....		88,510 34
To—		54,066 11
Amounts from Suspense Account on account of difference between the cost of Underlying Bonds refunded and the proceeds of the Refunding Bonds sold and the commissions paid therefor.....	\$600,000 00	
Discount on the Kansas City, Fort Scott & Memphis Railway Co. Refunding Mortgage Bonds.....	33,588 07	
Cost of Internal Revenue Stamps affixed on 499,925 shares of Capital Stock, also of engraving and printing stock certificates.....	13,923 50	
Engraving, Recording and Certifying Refunding Mortgage Bonds, also legal expenses, etc., in connection therewith.....	45,846 95	
Book value of 5382 shares of Eureka Improvement Co.'s Stock written off; also this Company's proportion of foreclosure expenses.....	2,240 78	
Book value of 120 shares of St. Louis Exposition and Music Hall Association Stock written off.....	960 00	
Discount of 17,230 shares of St. L. & S. F. R. R. Co. Second Preferred Stock sold, viz.:		
Par value.....	\$1,723,000 00	
Sold for.....	1,206,100 00	
Taxes for the year 1901 on lands in New Mexico and Arizona.....	516,900 00	
Excess expenditures in construction of St. Louis, Oklahoma & Southern Railway over bond issue.....	10,446 48	
Expenditures on sundry surveys.....	109,254 14	
Interest paid, being Coupon No. 7, for year ended June 30, 1901, on Kansas City, Memphis & Birmingham R. R. Co. Income Bonds.....	18,938 73	
Fort Worth & Rio Grande Ry. Co., worthless accounts written off.....	316,139 00	
Balance.....	5,399 99	
	3,269,462 38	
	\$4,943,700 02	\$4,943,700 02

By Balance at credit, June 30, 1902.....

\$5,269,462 38

C.—CONDENSED GENERAL BALANCE SHEET, JUNE 30, 1902, AND COMPARISON WITH PREVIOUS YEAR.

ASSETS.	1902.	1901.	Inc. or Dec.
Franchises and Property (for statement of increase see page 35, pamphlet report).....	\$100,632,122	\$93,026,500	Inc. \$7,605,613
Stocks and Bonds owned (see statement, page 37, pamphlet report, for Face and Book Values).....	1,744,892	3,456,616	Dec. 1,711,723
Total Franchises and Property.....	\$102,377,014	\$96,483,116	Inc. \$5,893,898
Suspense Account:			
Difference between cost of Underlying Bonds refunded and proceeds of 4 Per Cent. Refunding Bonds sold therefor to be charged to Profit and Loss Account in installments.....	5,677,510		Inc. 5,677,510
Franchises and Property, Auxiliary Companies.....	28,700,097		Inc. 28,700,097
Leasehold Estates—The K. C., F. S. & M. Ry. (see contra).....	62,000,610		Inc. 62,000,610
New Equipment under Blair & Co. Equipment Trust (see contra).....	1,245,000		Inc. 1,245,000
Refunding Mortgage 4 Per Cent. Bonds in Trust with Continental Trust Co. of New York (see contra).....	200,000	200,000	
Kansas City Division 1st Mortgage 4 Per Cent. Bonds in hands of U. S. Mortgage & Trust Co. (see contra).....		241,000	Dec. 241,000
Mississippi Valley Trust Co. for deposit by Special Master in Chancery for Kansas Midland Railway (see contra).....	873	1,455	Dec. 582
Current Assets:			
Cash in Treasury.....	370,724	965,926	Dec. 595,202
Cash in Trust Companies for Coupons and Sinking Funds.....	918,910	24,398	Inc. 894,512
Due from Agents and Conductors.....	966,904	381,273	Inc. 585,631
Due from Railroad Companies account Traffic.....	106,576	118,580	Dec. 12,004
Due from Companies and Individuals.....	1,683,084	550,059	Inc. 1,333,025
Due from United States Government.....	119,917	72,539	Inc. 47,374
Supplies on hand.....	1,096,343	436,462	Inc. 659,881
Unadjusted Accounts (balance).....	196,976	40,909	Inc. 156,067
Advances, account Roads under Construction.....	1,222,304	413,261	Inc. 809,043
S. L. & S. F. Ry. Co. Trust Mtge. of 1890, 6s, redeemed (par \$1000) cost.....	1,230		Inc. 1,230
St. L. & S. F. R. R. Co. 4 Per Cent. Bonds acquired for disbursements made under provision of Mortgage (par of Refunding Mortgage Bonds for 1902 and Consolidated Mortgage Bonds for 1901, \$3,091,125 and \$1,443,125, respectively) cost.....	3,095,741	1,354,828	Inc. 1,650,913
K. C., F. S. & M. Ry. Co. Refunding Mortgage 4 Per Cent. Bonds in Treasury, cost.....	452,500		Inc. 452,500
Total Current Assets.....	\$10,141,706	\$4,158,184	Inc. \$5,983,522
Trustees Sinking Funds Account.....	973,737		Inc. 973,737
St. Louis World's Fair Stock.....	17,500	3,500	Inc. 14,000
Balance of amount advanced to the Employees' Hospital Association of the "Frisco" Line.....		14,178	Dec. 14,178
Total Assets.....	\$211,334,048	\$101,101,443	Inc. \$110,232,605

NOTE.—1902 column includes combined figures of System; 1901 column includes only St. L. & S. F. R. R. Co. figures as then constituted.

*Practically all owned by this Company.

D.—SUMMARY OF FINANCIAL CHANGES FROM JUNE 30, 1901, TO JUNE 30, 1902.

Resources to be accounted for:	
Decrease of Assets:	
Stocks and Bonds owned.....	\$1,711,723 45
Kansas City Division 1st Mortgage 4 Per Cent. Bonds in hands of U. S. Mortgage & Trust Co.....	241,000 00
Mississippi Valley Trust Co., for deposit by Special Master in Chancery for Kansas Midland Railway.....	582 14
Cash in Treasury.....	595,202 56
Due from Railroad Companies account Traffic.....	12,003 60
Balance of amount advanced to the Employees' Hospital Association of the "Frisco" Line.....	14,178 44
Total Decrease of Assets.....	\$2,574,689 19
Increase of Liabilities:	
Funded Debt.....	\$12,548,800 00
Capital Stock Auxiliary Companies.....	1,000 00
Funded Debt Auxiliary Companies.....	12,084,100 00
Outstanding Securities on Leasehold Estate—the K. C., F. S. & M. Ry.:.....	
Stocks:	
Preferred Certificates.....	13,510,000 00
Common Certificates.....	15,000,000 00
Funded Debt and Equipment Notes.....	33,490,610 00
Equipment Notes, Blair & Co.....	1,245,000 00
Notes Payable.....	840,000 00
Audited Vouchers and Pay-Rolls.....	1,580,669 45
Due to Railroad Companies account Traffic.....	127,436 06
Interest on Bonds, matured.....	588,278 60
Interest on Bonds, accrued (not due).....	389,472 96
Taxes accrued (not due).....	82,432 33
Sinking Funds, accrued.....	1,071,408 26
Trustees' account Traffic Guaranty the K. C., F. S. & M. Ry. Co. Improvement Fund (K. C. & M. Ry. & Bridge Co.).....	18,089 29
Total Increase of Liabilities.....	109,254,235 26
Increase:	
Land Income Account (the K. C., F. S. & M. Ry. Co.).....	32,207 40
Increase of Profit and Loss:	
Balance at Credit, June 30, 1902.....	\$5,269,462 38
Balance at Credit, June 30, 1901.....	1,910,668 87
	1,358,793 51
Grand Total to be accounted for.....	\$113,219,925 36

B.—STATEMENT OF GENERAL INCOME ACCOUNT OF THE SYSTEM FOR THE FISCAL YEAR ENDED JUNE 30, 1902, AND COMPARISON WITH PREVIOUS YEAR.

	1902.	1901.*	Inc. or Dec.
Average Mileage.....	3,252 35	2,922 85	Inc. 329 50
Percentage of Operating.....	62 21	60 04	Inc. 2 17
Gross Earnings from Operation.....	\$21,620,882 49	\$19,324,279 00	Inc. \$2,296,603
Operating Expenses.....	13,472,470 60	11,409,887 12	Inc. 2,062,583
Net Earnings from Operation.....	\$8,148,411 89	\$7,914,391 88	Inc. \$234,020
Add—			
Miscellaneous Income.....	177,699 50	175,148 89	Inc. 2,551
Land Department Receipts.....	19,460 88	11,659 55	Inc. 7,801
Total Net Income.....	\$8,345,572 27	\$8,101,200 32	Inc. \$244,372
Less—			
Interest on Funded Debt.....	\$3,191,720 15	\$2,586,658 40	Inc. \$605,062
Rental of Leased Lines (see Table G, pamphlet report).....	2,434,068 78	1,887,671 96	Inc. 546,397
Taxes.....	380,758 97	338,074 61	Inc. 22,684
Rental of Tracks and Terminals.....	81,545 77	75,096 81	Inc. 6,449
Expenditures for Improvements: Construction and Additional Equipment, year ended June 30, 1901, in excess of Bonds issuable or other provision therefor.....		220,619 32	Dec. 220,619
Total Interest and all other charges.....	\$6,068,093 67	\$5,108,121 10	Inc. \$959,973
Surplus—applicable to Dividends.....	\$2,277,478 60	\$2,993,079 22	Dec. \$715,601
Out of which were declared the following Dividends: 4 per cent. each on First and Second Preferred Stock in 1902, \$199,742.12 and \$605,538.94, respectively, and in 1901 4 per cent. on First Preferred Stock and 2½ per cent. on Second Preferred Stock, and 4 per cent. on the Kansas City, Fort Scott & Memphis R. R. Co. Common Stock.....	805,281 06	995,920 00	Dec. 190,639
Remaining—			
Surplus carried to credit of Profit and Loss.....	\$1,472,197 54	\$1,997,159 22	Dec. \$524,962

*For the purpose of comparison with 1902 the 1901 column includes the combined corresponding figures of the System Lines then in operation, though not then acquired.

C.—CONDENSED GENERAL BALANCE SHEET, JUNE 30, 1902, AND COMPARISON WITH PREVIOUS YEAR.

LIABILITIES.	1902.	1901.	Inc. or Dec.
Capital Stock:			
1st Preferred.....	\$5,000,000	\$5,000,000	
2d Preferred.....	16,000,000	16,000,000	
Common.....	29,000,000	29,000,000	
Funded Debt (see Table J, pamphlet report).....	59,019,925	46,471,125	Inc. 12,548,800
Called Bond (see Table J, pamphlet report).....	1,000		Inc. 1,000
Bonds redeemed.....		12,000	Dec. 12,000
Total Capital Stock and Bonds.....	\$109,020,925	\$96,483,125	Inc. \$12,537,800
Capital Stock Auxiliary Companies.....	12,084,100		Inc. 12,084,100
Funded Debt, Auxiliary Companies (see Table J, pamphlet report).....	16,671,920		Inc. 16,671,920
Total Capital Stock and Bonds, Auxiliary Companies.....	\$28,756,020		Inc. \$28,756,020
Outstanding Securities on Leasehold Estate, the K. C., F. S. & M. Ry.:			
Stocks:			
Preferred Certificates.....	13,510,000		Inc. 13,510,000
Common.....	15,000,000		Inc. 15,000,000
Funded Debt and Equipment Notes (see Table J, pamphlet report).....	33,490,610		Inc. 33,490,610
Total Outstanding Securities on Leasehold Estate, the K. C., F. S. & M. Ry. (see contra).....	\$62,000,610		Inc. \$62,000,610
Equipment Notes, Blair & Co. (see contra).....	1,245,000		Inc. 1,245,000
Refunding Mortgage 4 Per Cent. Bonds, Northwestern Division, Improvement and Equipment Fund (see contra).....	200,000	200,000	
Kansas City Division 1st Mtge. 4 Per Cent. Bonds, Improvement and Equipment Fund (see contra).....		241,000	Dec. 241,000
Special Master, Kansas Midland Ry. (see contra).....	873	1,455	Dec. 582
Current Liabilities:			
Notes Payable.....	840,000		Inc. 840,000
Audited Vouchers and Pay-Rolls.....	2,479,540	898,871	Inc. 1,580,669
Due to Companies and Individuals.....	43,533	114,212	Dec. 70,678
Due to Railroad Companies, account Traffic.....	127,436		Inc. 127,436
Interest on Bonds, Matured.....	1,306,650	718,371	Inc. 588,279
Interest on Bonds, Accrued (not due).....	671,471	281,968	Inc. 389,473
Taxes, Accrued (not due).....	170,515	85,063	Inc. 82,432
Total Current Liabilities.....	\$5,639,145	\$2,101,534	Inc. \$3,537,610
Sinking Funds, Accrued.....	1,096,414	25,066	Inc. 1,071,408
Kansas City, Osceola & Southern Ry., Interest Fund.....	50,284	92,693	Dec. 42,409
St. Louis, Oklahoma & Southern Ry., Interest Fund.....		38,025	Dec. 38,025
Miscellaneous Liabilities of Receiver St. Louis & San Francisco Railway, and prior, and Atlantic & Pacific Railroad Co., Central Division, prior to purchase, assumed by this Company.....		7,937	Dec. 7,937
Trustees' Acct. Traffic Guaranty the K. C., Ft. S. & M. Ry. Co.....	5,018		Inc. 5,018
Improvement Fund (K. C. & M. Ry. & Bridge Co.).....	18,089		Inc. 18,089
Total Liabilities.....	\$208,032,378	\$99,190,774	Inc. \$108,841,604
Accounts to Balance:			
Land Income Acc't (the K. C., Ft. S. & M. Ry. Co.).....	32,207		Inc. 32,207
Profit and Loss.....	3,269,462	1,910,669	Inc. 1,358,794
Total.....	\$211,334,048	\$101,101,443	Inc. \$110,232,605

NOTE.—1902 column includes combined figures of System; 1901 column includes only St. L. & S. F. R. R. Co. figures as then constituted.

*Practically all owned by this Company.

This sum is accounted for as follows:

Increase of Assets:	
Franchises and Property.....	\$7,605,612 72
Suspense Account:	
Difference between cost of Underlying Bonds refunded and proceeds of 4 Per Cent. Refunding Bonds sold therefor to be charged to Profit and Loss Account in installments.....	5,677,509 99
Franchises and Property, Auxiliary Companies.....	28,700,096 78
Leasehold Estate, the K. C., F. S. & M. Ry.....	62,000,610 00
New Equipment under Blair & Co. Equipment Trust.....	1,245,000 00
Cash in Trust Companies for Coupons and Sinking Funds.....	894,511 92
Due from Agents and Conductors.....	585,681 21
Due from Companies and Individuals.....	1,333,025 04
Due from United States Government.....	47,374 46
Supplies on hand.....	659,881 31
Unadjusted Accounts (balance).....	156,067 06
Advances, account Roads under Construction.....	809,543 32
St. L. & S. F. Ry. Co. Trust Mortgage of 1890, 6s, redeemed (par \$1000) cost.....	1,230 00
St. L. & S. F. R. R. Co. 4 Per Cent. Bonds acquired for disbursements made under provision of Mtge. (par \$1,648,000) cost.....	1,650,913 30
The K. C., F. S. & M. Ry. Co. Refunding Mortgage 4 Per Cent. Bonds in treasury, cost.....	452,500 00
Trustees' Sinking Fund Account.....	973,737 28
St. Louis World's Fair Stock.....	14,000 00
Total Increase of Assets.....	\$112,807,294 39
Decrease of Liabilities:	
Bonds Redeemed.....	\$12,000 00
Kansas City Division 1st Mortgage 4 Per Cent. Bonds, Improvement and Equipment Fund.....	241,000 00
Special Master, Kansas Midland Railway.....	582 14
Due to Companies and Individuals.....	70,678 92
Kansas City, Osceola & Southern Railway Interest Fund.....	42,408 86
St. Louis, Oklahoma & Southern Railway Interest Fund.....	38,024 53
Miscellaneous Liabilities of Receiver St. Louis & San Francisco Railway, and prior, and of Atlantic & Pacific Railroad Central Division prior to purchase, assumed by this Company.....	7,936 51
Total Decrease of Liabilities.....	412,630 97
Grand Total accounted for.....	\$113,219,925 36

FINANCIAL NEWS.

The Manufacturers' Record invites information about Southern financial matters, items of news about new institutions, dividends declared, securities to be issued, openings for new banks, and general discussions of financial subjects bearing upon Southern matters.

Review of the Baltimore Market.

Office Manufacturers' Record.

Baltimore, Md., October 22.

There has been a fair business in the Baltimore stock market during the past week, interest centering around Seaboard issues, although there was some activity in the stock and bonds of the United Railways & Electric Co. G. B. S. Brewing issues also assumed a little prominence, and there was a trifle of activity in Cotton Duck securities. There was not much doing in trust issues or in bank stocks, but a good demand continued for investment bonds.

In the trading Seaboard common rose from 29½ to 30½, and reacted to 29½, while the preferred advanced from 47½ to 48½, but lost all the gain; the 4 per cent. bonds sold between 84 and 85, and the 5s at 103 to 103½. United Railways common moved from 13¾ to 14¾, and reacted a trifle; the preferred sold at 34; the income bonds rose from 67½ to 68½, from which there was a fractional reaction, and the 4 per cents were traded in between 94½ and 95½. United Light & Power preferred changed hands at 39, and the 4½s at 85. Cotton Duck common moved between 7 and 8, the incomes between 39½ and 40½, and the 5s sold at 77½. G. B. S. common changed hands at 13 to 14, the incomes from 38 to 39, the scrip selling at 37½ and the 1sts from 49 to 50. Consolidated Gas stock sold at 73 and 73½, and the 6 per cents at 112 to 112½. Atlantic Coast Line common ranged between 170 and 172½.

Among the trust-company stocks International rose steadily from 144 to 148½, and Union Trust sold at 71½ and 72. A sudden decline of Continental to 199½ and then a rapid rise to 212 attracted not a little attention. It was ascribed to manipulation by traders. United States Fidelity & Guaranty sold at 147½ to 150, Citizens' Bank at 32, Bank of Commerce at 29 and Bank of Baltimore at 125½.

Other securities traded in were as follows: Georgia Southern & Florida 1st preferred, 102; Georgia Southern & Florida 5s, 115; Charleston & Western Carolina 5s, 113 to 113½; Virginia Midland 2ds, 113½ and 114; do. 5ths, 115 and 115½; Chesapeake & Ohio Canal preferred bonds, 10; Maryland 3s, 101½; Town of Harrison, W. Va., 5s, 1924, 106; Atlanta Gas Light 5s, 107; Maryland & Pennsylvania common, 29 to 31; Georgia & Alabama Consol. 5s, 111½ and 111¾; Consolidation Coal, 86; Nashville Railway common, 5 to 6; do. 5s, certificates, 75½ to 78; National Enameling preferred, 86; Suffolk & Carolina common, 44; Atlanta & Charlotte 1sts, 113; Knoxville Traction 5s, 101; Northern Central common, 123½; do. 5s, A, 124½; do. 4½s, 112; Firemen's Insurance, 21; South Bond 5s, 111½; Monticello Distillery 6s, 103; Baltimore Brick, 9 and 9½; Baltimore City 3½s, 1930, 110½; do. 4s, 1920, H. R., 114½; Anacostia & Potomac 5s, 97½; North Carolina 6s, 131½; Virginia Centurys, 97½; Richmond & Danville Equipment, 100; West Virginia Central 6s, 115; Charlottesville 5s, 1906, 101¾ and 102; City Passenger 5s, 108; Raleigh & Gaston S. R. Car Trust 5s, 100½; Alabama Consolidated Coal & Iron common, 36½ to 39; Charleston Consolidated Electric 5s, 91¾; Cumberland Light & Power 6s of Nashville, 93.

SECURITIES AT BALTIMORE.

Last Quotations for the Week Ended October 22, 1902.

Railroad Stocks.	Par.	Bid.	Asked
Georgia Southern & Florida.....	100	40	...
Georgia Sou. & Fla. 1st Pref.....	100	101½	104
Georgia Sou. & Fla. 2d Pref.....	100	51½	54
United Railways & Elec. Co.....	50	14	14½
Seaboard Railway Common.....	100	29½	29¾
Seaboard Railway Preferred.....	100	47½	47¾
Atlantic Coast Line of Conn.....	100	35½	35¾

Bank Stocks.	Par.	Bid.	Asked
Citizens' National Bank.....	10	31	33
Commercial & Far. Nat. Bank.....	100	137½	140
First National Bank.....	100	163	164
German Bank.....	100	107½	108
Manufacturers' National Bk.....	100	100	105
National Bank of Baltimore.....	100	125½	127
National Bank of Commerce.....	15	29½	29¾
National Exchange Bank.....	10	11½	12
National Howard Bank.....	10	37	37
National Marine Bank.....	10	31½	32
National Mechanics' Bank.....	100	117	118½
National Union Bank of Md.....	10	12	12
Old Town Bank.....	100	190	190
Second National Bank.....	20	38	38
Western National Bank.....	20	38	38

Trust, Fidelity and Casualty Stocks.	Par.	Bid.	Asked
American Bonding & Trust.....	50	83	83
Baltimore Trust & Guarantee.....	100	312½	325
Central Real Estate & Trust.....	50	56	59
Colonial Trust.....	50	32	33½
Continental Trust.....	100	210	212
International Trust.....	100	147	149
Maryland Casualty.....	25	53	55
Maryland Trust.....	100	200	209
Mercantile Trust & Deposit.....	50	160	170
Union Trust.....	50	71	72½
U. S. Fidelity & Guaranty.....	100	150½	152½

Miscellaneous Stocks.	Par.	Bid.	Asked
G. B. & S. Brewing Co.....	100	13½	14
United Elec. L. & P. Pref.....	50	39	40
Cotton Duck Voting Trust.....	100	7	8
Consolidation Coal.....	100	85	86
Georgia's Creek Coal.....	100	115	116
Consolidated Gas.....	100	73	73½
Ala. Con. C. & I. Common.....	100	35½	37
Ala. Con. C. & I. Preferred.....	100	86	88

Railroad Bonds.	Par.	Bid.	Asked
Atlanta & Charlotte 1st 7s, 1907.....	100	113½	114
Columbia & Greenville 1st 6s, 1916.....	100	119	120½
Georgia, Car. & North 1st 5s, 1923.....	100	113½	114
Petersburg, Class A 5s, 1928.....	100	116	117
Seaboard & Roanoke 6s, 1916.....	100	117½	118
Southern Railway Co. 5s, 1904.....	100	113½	114
Virginia Midland 2d 5s, 1911.....	100	113	114
Virginia Midland 5th 5s, 1926.....	100	115½	116½
West. North Carolina Con. 6s, 1914.....	100	118	118½
West Virginia Central 1st 6s, 1911.....	100	115	116
Wilmington & Wel. Gold 5s, 1935.....	100	121½	122
Charleston City Railway 5s, 1923.....	100	105½	106
Charleston Con. Electric 5s, 1909.....	100	91	93
Knoxville Traction 1st 5s, 1928.....	100	101	102
Newport News & Old Pt. 5s, 1938.....	100	104½	105
United Railways 1st 4s, 1918.....	100	84½	85
United Railways Inc. 4s, 1940.....	100	68	68½
Seaboard 4s.....	100	84½	85½
Seaboard 10-year 5s.....	100	103½	104½
Georgia & Alabama Con. 5s.....	100	111½	112
South Bond 5s.....	100	110½	111½
Atlanta Street Railway 5s.....	100	106½	107
Char. & W. Car. 5s.....	100	113	114

Miscellaneous Bonds.	Par.	Bid.	Asked
Mt. V. & Woodby Cot. Duck 5s.....	40	40½	41
Mt. V. & Woodby Cot. Duck Inc.....	40	40½	41
G. B. & S. Brewing 1st 3-4s.....	40	40½	41
G. B. & S. Brewing 2nd 3-4s.....	40	40½	41
United Elec. Light & Power 4½s.....	40	84½	85½
Consolidated Gas 6s, 1910.....	100	112	112½
Consolidated Gas 5s, 1939.....	100	114½	115

SOUTHERN COTTON MILL STOCKS

Quotations Furnished by Hugh MacRae & Co., Wilmington, N. C., for Week Ending October 21.

	Par.	Bid.	Asked
Abbeville Cotton Mills (S. C.).....	100	85	88
Alken Mfg. Co. (S. C.).....	100	88	93
Anderson Cotton Mills (S. C.).....	100	124½	125
Arkwright Mills (S. C.).....	100	115	125
Augusta Factory (Ga.).....	100	62	65
Avondale Mills (Ala.).....	100	85	88
Bibb Mfg. Co. (Ga.).....	100	110	115
Bennettsville Mfg. Co. (S. C.).....	100	60	65
Brandon Mills (S. C.).....	100	96	103
Cabarrus Cotton Mills (N. C.).....	100	122	125
Clearwater Biehy & Mfg. Co. (Ga.).....	100	104	107
Clifton Mfg. Co. (S. C.).....	100	174	185
Clinton Cotton Mills (S. C.).....	100	118	122
Courtenay Mfg. Co. (S. C.).....	100	122	130
Dallas Mfg. Co. (Ala.).....	100	73	78
Darlington Mfg. Co. (S. C.).....	100	90	95
Eagle & Phenix Mills (Ga.).....	100	95	100
Enoree Mfg. Co. (S. C.).....	100	80	85
Enterprise Mfg. Co. (Ga.).....	100	78	85
Exposition Cotton Mills (Ga.).....	100	151	156
Gaffney Mfg. Co. (S. C.).....	100	97	102
Granby Cotton Mills (S. C.).....	100	102	107
Granby Cot. Mills (S. C.) 1st Pfd.....	100	101½	106½
Graniteville Mfg. Co. (S. C.).....	100	150	162½
Greenwood Cotton Mills (S. C.).....	100	103	108
Grendel Mills (S. C.).....	100	103	108
Henrietta Mills (N. C.).....	100	200	210
King, John P. Mfg. Co. (Ga.).....	100	110	115
Langston Cotton Mills (S. C.).....	100	102	105
Lanier Mfg. Co. (S. C.).....	100	102	105
Laurens Cotton Mills (S. C.).....	100	150	158
Lockhart Mills (S. C.).....	100	103	108
Louise Mills (N. C.).....	100	101	106
Mayo Mills (N. C.).....	100	140	145
McColl Mfg. Co. (S. C.).....	100	110	115
Monarch Mills (S. C.).....	100	95	100
Monrovia Mills (S. C.).....	100	94	96
Sewberry Cotton Mills (S. C.).....	100	105	110
Norrie Cotton Mills (S. C.).....	100	104	109
Odell Mfg. Co. (N. C.).....	100	100	104
Orr Cotton Mills (S. C.).....	100	100	104
Pacolet Mfg. Co. (S. C.).....	100	192	200
Pelzer Mfg. Co. (S. C.).....	100	165	170
Piedmont Mfg. Co. (S. C.).....	100	160	168½
Poe, F. W., Mfg. Co. (S. C.).....	100	131	133
Richland Cotton Mills (S. C.).....	100	99	104
Richland Cotton Mills (S. C.) Pfd.....	100	99	104
Ronoke Mills (N. C.).....	100	99	104
Sibley Mfg. Co. (Ga.).....	100	97	102
Southern Cotton Mills (N. C.).....	100	99	104
Spartan Mills (S. C.).....	100	134	142
Trion Mfg. Co. (Ga.).....	100	125	140
Tuacapa Mills (S. C.).....	100	134	146
Union Cotton Mills (S. C.).....	100	150	155
Union Cotton Mills (S. C.) Pfd.....	100	100	102
Victor Mfg. Co. (S. C.).....	100	115	122
Warren Mfg. Co. (S. C.).....	100	96	99
Warren Mfg. Co. (S. C.) Pfd.....	100	96	99
Washington Mills (Va.).....	100	6	6

Washington Mills (Va.) Pfd.....	105
Whitney Mfg. Co. (S. C.).....	110
Wilmington Cot. Mills (N. C.) Pfd.....	100
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Railroad Reports.

The Baltimore & Ohio Railroad reports for September gross earnings \$5,461,691, increase \$464,353; expenses \$3,299,805, increase \$341,232; net earnings \$2,161,886, increase \$123,121. For three months gross earnings \$16,188,073, increase \$1,481,787; expenses \$9,874,010, increase \$1,036,472; net earnings \$6,314,063, increase \$446,315. The statement includes the Baltimore & Ohio, Baltimore & Ohio Southwestern, Ohio River, West Virginia Short Line, Pittsburg & Western, Pittsburg, Painsville & Fairport, Pittsburg, Cleveland & Toledo and the Pittsburg Junction railroads.

The Chicago, Rock Island & Pacific Railway Co. reports for August gross earnings \$3,879,676, increase \$1,009,780; operating expenses and taxes \$2,107,859, increase \$444,937; net earnings \$1,771,817, increase \$564,843; total income \$1,803,700, increase \$469,358. From July 1 to August 31 gross earnings \$7,508,014, increase \$2,041,657; operating expenses and taxes \$4,312,520, increase \$947,462; net earnings \$3,195,494, increase \$1,094,195; total income \$3,396,736, increase \$974,263.

The Pine Bluff & Arkansas Railway reports for August gross earnings \$2257, increase \$604; expenses and taxes \$1291, decrease \$1280; net earnings \$966, increase \$1884; surplus after paying charges \$483, increase \$1882, there having been a deficit last year. For two months gross earnings \$4427, increase \$1375; expenses and taxes \$2776, decrease \$1381; net earnings \$1651, increase \$2756; surplus after paying charges \$685, increase \$2751.

The Lexington & Eastern Railway reports for August gross earnings \$48,784, increase \$13,055; expenses \$27,939, increase \$6661; net earnings \$20,845, increase \$6394. For two months gross earnings \$97,091, increase \$20,865; expenses \$55,680, increase \$15,022; net earnings \$41,411, increase \$14,843.

The Southern Pacific Company reports for August gross earnings \$6,853,384, decrease \$353,139; operating expenses and taxes \$4,606,471, increase \$198,987; net earnings \$2,186,913, decrease \$552,126; total income \$2,245,305. From July 1 to August 31 gross earnings \$13,779,678, decrease \$120,480; operating expenses and taxes \$9,298,127, increase \$617,048; net earnings \$4,481,551, decrease \$737,528; total income \$4,725,039. The appropriation of income was as follows: Fixed charges, including rentals, \$2,657,024; for betterments and additions to properties and equipment, \$3,309,394; total, \$5,966,418, leaving a deficit of \$1,241,379, of which \$203,444 was for August and the rest of July.

The San Antonio & Aransas Pass Railway reports for August gross earnings \$223,865, increase \$8600; expenses and taxes \$152,620, increase \$11,951; net earnings \$81,245, decrease \$3291; charges and rentals \$63,000; balance \$18,245; surplus after paying betterments \$17,492. For two months gross earnings \$411,926, increase \$14,788; expenses and taxes \$309,165, increase \$18,542; net earnings \$102,821, decrease \$3754; charges and rentals, \$126,000; loss, \$23,179; betterments and additions, \$8838; deficit, \$32,017.

The Atlantic Coast Line Railroad Co. reports for August gross earnings \$1,201,955, increase \$67,953; operating expenses \$987,246, increase \$112,679; net earnings \$214,709, decrease \$44,726. From July 1 to August 31 gross earnings \$2,567,324, increase \$255,752; operating expenses \$1,877,726, increase \$116,277;

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net earnings \$689,598, increase \$139,475.	
The Yazoo & Mississippi Valley Rail- road Co. reports for August gross earn- ings \$505,217, increase \$76,154; oper- ating expenses \$489,711, increase \$107,- 010; net earnings \$15,506, decrease \$30,- 856. From July 1 to August 31 gross earnings \$946,277, increase \$106,909; operating expenses \$955,394, increase \$223,800; deficit \$9117, increase \$116,951.	
[For Additional Financial News, see Pages 28 and 29.]	

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